
MRRC SHASTA AREA MINES

***THREATENED,
ENDANGERED, AND
SENSITIVE SPECIES
AND SPECIES OF
SPECIAL CONCERN***

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(Prepared by SHN Consulting Engineers and
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INTRODUCTION

During preparation of the Use Attainability Analysis (UAA), sensitive resources were reviewed in the West Squaw Creek Watershed area to determine what species, if any, might be affected by proposed changes in receiving water limits and future activities in the watershed, associated with cleanup efforts. The focus of this document is on Threatened, Endangered, Sensitive or Species of Special concern (TES) that are known to exist in the watershed, or may have potential habitat within the watershed. General Project Location is included on Figure 1. Watershed location is included as Figure 2, and general watershed features are included on Figure 3.

Following review of the Agency Review Draft, EPA requested MRRC to prepare an addendum addressing TES species in the vicinity of the project site. This addendum responds to the EPA request. Documentation included in the addendum consists of Site Description, Literature Reviewed, Species Habitat Requirements, and Conclusions.

SITE DESCRIPTION

A portion of West Squaw Creek and its tributaries are the focus of the UAA that is being prepared by MRRC. The West Squaw Creek Watershed encompasses approximately 15.5 square miles and enters Shasta Lake approximately 2.5 miles northwest of Shasta Dam. Very steep, rocky slopes characterize topography of the watershed; few slopes are less than 35 degrees and slopes of 50 degrees or more are common. Elevations range from 1,000 feet above mean sea level (MSL) at the confluence of West Squaw Creek with Lake Shasta, to 4,649 feet above MSL at East Shirt Peak, the highest point in the watershed. Numerous bluffs and cliffs can be encountered in the area, making travel difficult. While some old jeep and logging roads exist, the primary mode of transportation is by foot. The primary tributaries within the watershed are the North Fork of West Squaw Creek and West Squaw Creek main stem. Ownership consists of USFS and mining interests and is shown in Figure 4. The UAA addressed beneficial uses in the lower portion of the West Squaw Creek main stem.

The vegetation in the watershed varies with elevation. Chaparral, including dense stands of manzanita (*Arctostaphylos sp.*) and other brush species predominate at the lower elevations near the streambed. Vegetation within the balance of the watershed varies with digger pine (*pinus sabiniana*), ponderosa pine (*pinus ponderosa*), sugar pine (*pinus lambertiana*), Douglas-fir (*pseudotsuga taxifolia*), California black oak (*Quercus kelloggii*), canyon live oak (*Q. wislizenii*) and interior live oak (*Q. chrysolepis*). This portion of Northern California has a relatively high fire frequency return interval. Prior to intensive fire suppression that began in the early 1900's, the fire return interval for the area ranged from 7-11 years. Fires were numerous, but typically small in size (1/4 to 2 acres) with the largest known historical fire being approximately 50 acres in size.

Surrounding forested lands have been modified over the last 80 years of mining, timber harvest and wildfire and related suppression activities. Mining activities removed vegetation for the establishment of roads, mine portals, waste rock dumps and mine ore storage, processing and transport areas. Between 1896 and 1919, this portion of Shasta County developed into one of the major copper mining and smelting regions of the United States. Numerous mines supported five copper smelters. As a whole, Shasta County led California in total value of mineral production, excluding petroleum, during this period. The West Shasta Mining District of Shasta County, of which the project are is located, accounted for the major amount of copper production in California

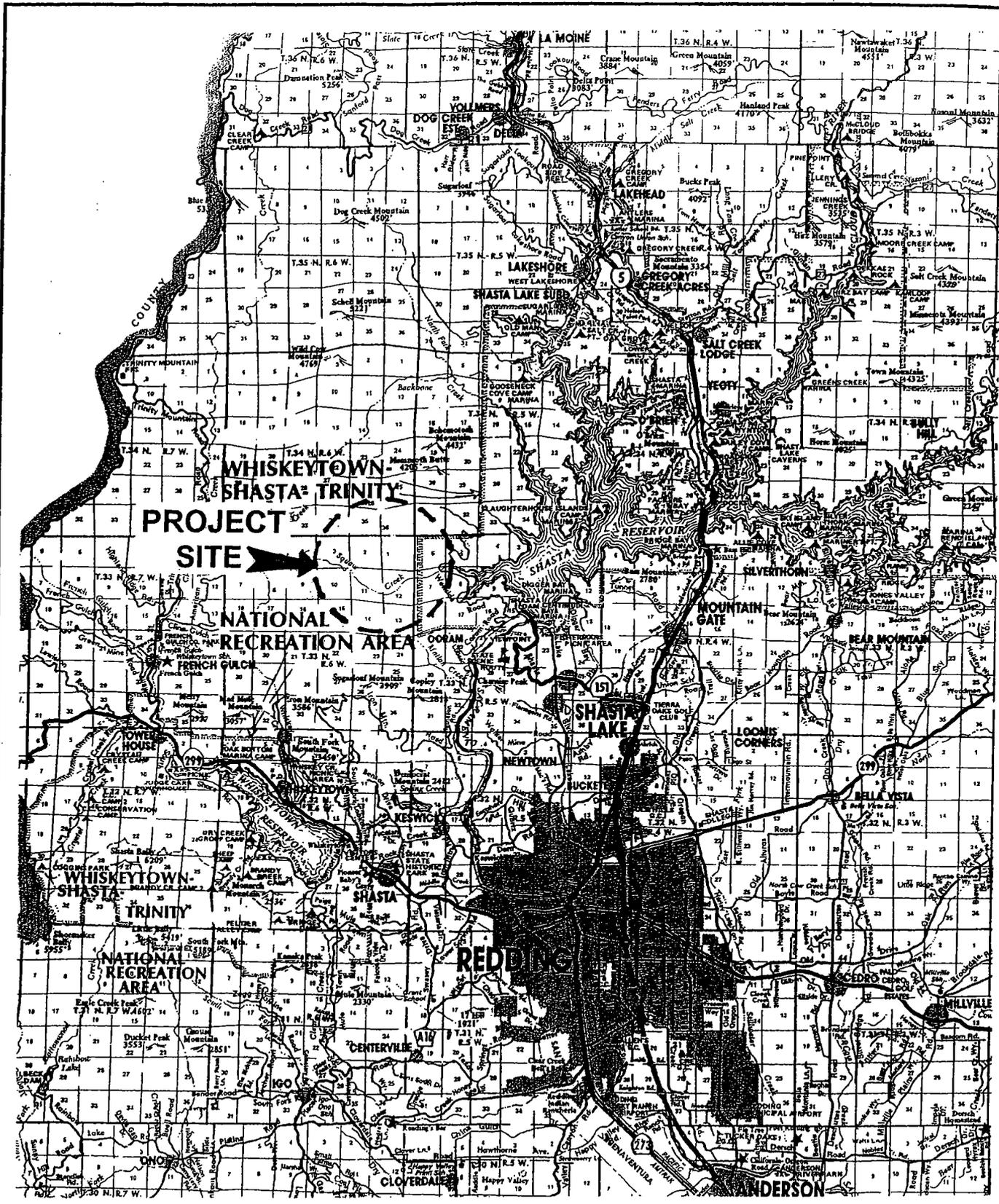
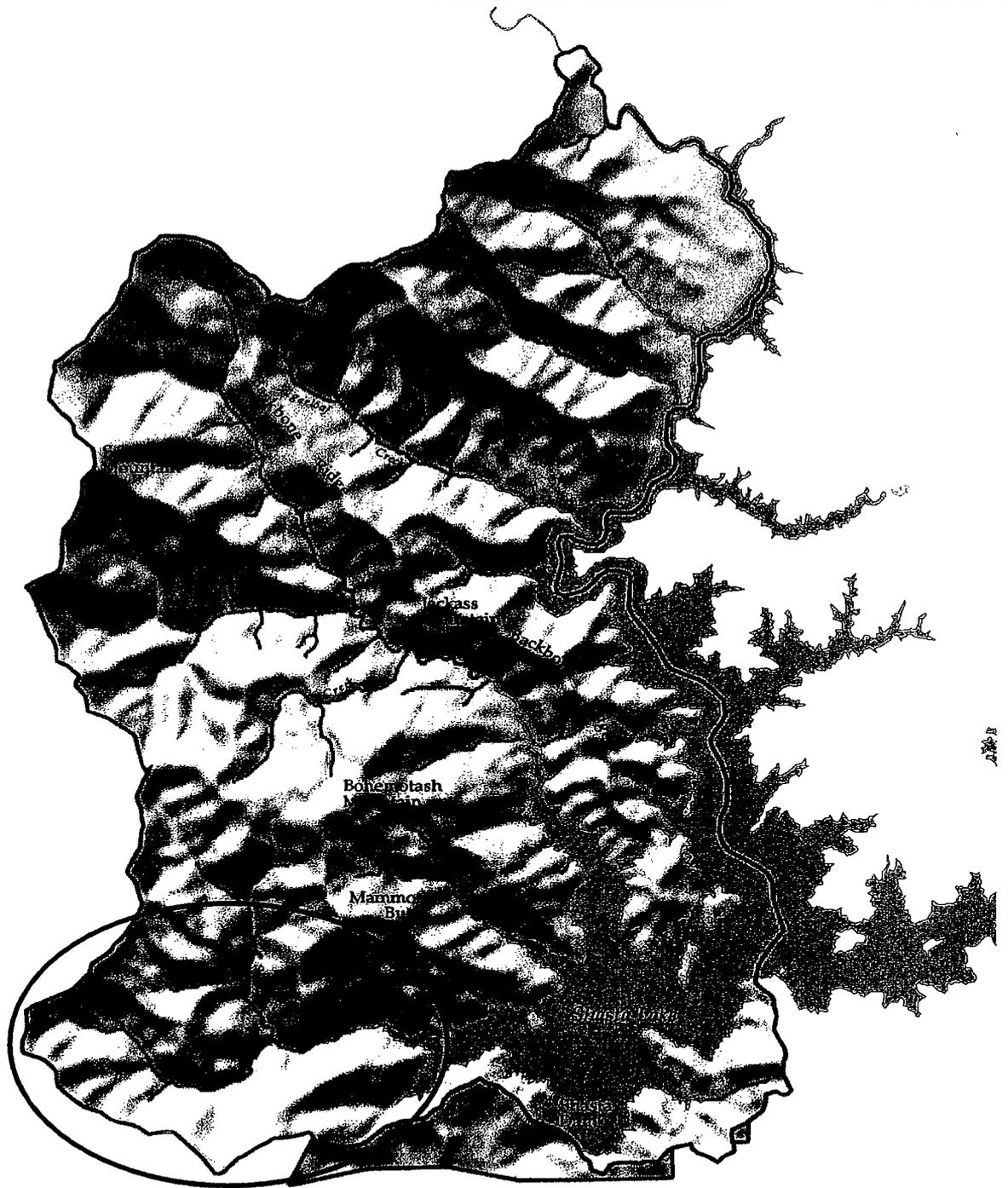


FIGURE 1
 GENERAL SITE LOCATION
 MINING REMEDIAL RECOVERY COMPANY
 SHASTA COUNTY, CALIFORNIA

SOURCE: CSAA, 1997

SCALE: 1"=4 MI.



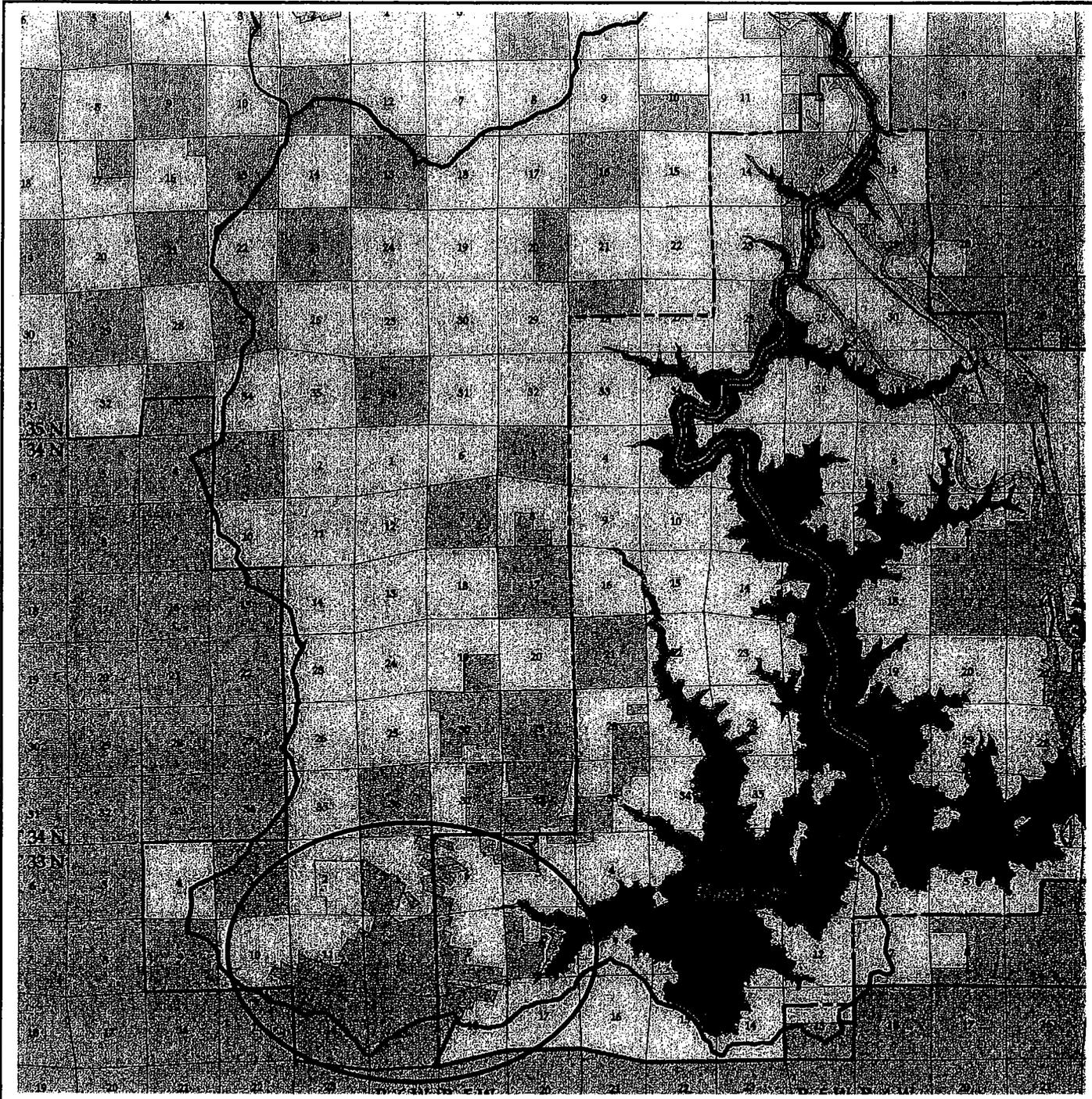
○ - PROJECT AREA



FIGURE 3
DOMINANT PHYSICAL FEATURES
WEST SQUAW CREEK
MINING REMEDIAL RECOVERY COMPANY
SHASTA COUNTY, CALIFORNIA

SOURCE: USFS

NOT TO SCALE



Scale 1:126720 (1/2inch = 1 mile)



○ - PROJECT AREA

-  National Forest
-  Other Ownership
-  Watershed Boundary
-  National Forest Boundary
-  National Recreation Area Boundary

FIGURE 4
LAND OWNERSHIP
 WEST SQUAW CREEK
 MINING REMEDIAL RECOVERY COMPANY
 SHASTA COUNTY, CALIFORNIA

SOURCE: USFS

NOT TO SCALE

prior to 1946. The copper resources of Shasta County are located along a horseshoe-shaped deposit approximately 30 miles in length and one-half to four miles wide that stretch from Whiskeytown Lake to the west, to Highway 299 to the east. Mines in the area were developed extensively during the period from 1896 to 1919. Over a three-year period between 1919 and 1922, the smelters were shut down due to economics and pressure from farm interests related to fume damages to orchard crops. Due to the elimination of the smelters, the mines also ceased operation during this time period. The mines have not operated since.

Significant disturbance of the area flora and fauna occurred during mine operation. This disturbance was exacerbated by years of severe erosion that followed from the uncontrolled surface water and precipitation that fell on the denuded hill slopes. Most recently discharge from abandoned workings and precipitation of rain through waste rock dumps continues to degrade water quality and habitat conditions in the affected area of West Squaw Creek.

Mines in the West Squaw Creek Watershed discussed in the UAA are the Early Bird, Keystone, Balaklala, and Shasta King mines. These mines are briefly described below.

EARLY BIRD MINE

The Early Bird Mine is located at an elevation of 2,700 feet on the south side of West Squaw Creek. The tributary from the Early Bird Mine area enters West Squaw Creek upstream of the tributaries from the Keystone, Balaklala and Shasta King mines. Approximately 40,000 tons of ore were removed from the Early Bird Mine between 1922 and 1928. The mine adit was sealed in 1987 with a concrete bulkhead.

KEYSTONE MINE

Elevations of the Keystone Mine workings lie between 2,976 and 3,380 feet of elevation, and the mine is located upgradient of the Balaklala Mine in the Windy Creek drainage; Windy Creek is a tributary to West Squaw Creek. Approximately 122,000 tons of ore were removed from the Keystone Mine between 1900 and 1928. In 1993, bulkhead seals were installed on the main Keystone portal and two higher level portals. After emplacement, the hydraulic head created by the seals caused surface seeps of Acid Rock Drainage (ARD) to rupture through weak rock behind the bulkhead.

In January 1996, an HDPE-lined diversion channel, approximately 1,600-foot long and 10-foot wide, was installed to collect ARD and other water from the Keystone Mine drainage area. The structure prevents discharges from the Keystone portal and Keystone acidic seeps from flowing into Windy Creek. During April 1997, an additional 300-foot long diversion channel was installed to prevent a seasonal stream from flowing over and through the Keystone waste rock dump. MRRC recently installed a wetland treatment cell to further treat the discharge, reducing the metal loading and acidity from the Keystone Mine.

BALAKLALA MINE

The Balaklala Mine contains two large ore bodies, the Windy Camp and the Weil; estimated production from the Windy Camp ore body was 295,000 to 480,000 tons. Operations at the Balaklala Mine ceased in 1928. Remediation activities at the Windy Camp and Weil portals include installation of portal seals, consolidation and reclamation of waste rock, and construction of surface water diversions.

SHASTA KING MINE

The Shasta King Mine workings lie northeast of the Balaklala Mine, across West Squaw Creek, between 1,605 feet and 1,816 feet elevation. About 84,000 tons of ore were removed from the mine between 1902 and 1919. The mine has eight adits, one just above West Squaw Creek, and the other seven located a few hundred feet above West Squaw Creek. Waste dumps from the adits generally extend from the portals and into the creek. Access to this mine is extremely limited, consisting of an old road that has sloughed away, reducing it to little more than a trail with extremely narrow spots. Historically, access to these portals was via an aerial tramway; building roads to this area was, and remains, economically infeasible.

A bulkhead has been installed in the lower portal; the bulkhead is currently leaking from its upper edge at approximately, however, this leakage is not a significant contributor of flows or contaminants. Only the lower portal consistently flows. An additional bulkhead seal is planned for construction in summer 2001 to address ongoing leakage. This second seal will be placed in front of the existing seal in an effort to stop leakage around the older seal.

LITERATURE REVIEWED

During the development of the UAA, SHN requested known species sightings for the watershed from the California Natural Diversity Data Base (NDDB), administered by the California Department of Fish and Game (DFG) and reviewed reports prepared for activities in the vicinity of the site by the USFS. Information provided by the NDDB is by US Geological Service (USGS) quadrangle sheet. For this project, the Whiskeytown, Shasta Dam, Behemotash Mtn., and Schell Mtn. Quads cover the watershed. These quads were reviewed to determine if TES species or their habitat were present. The USFS has conducted limited site review in response to a fire in the area in 1999. The information was included in the West Lake Watershed Assessment addressing proposed post-fire timber salvage activities.

In addition to information provided by the NDDB, a review of the California Wildlife Habitat Relationships System (WHR, Version 7.0) was undertaken; the WHR was produced by the DFG in cooperation with the California Interagency Wildlife Task Group. The WHR indicates potential species present by habitat type in the area. Habitat present in the general vicinity is generally classified as Blue Oak-Foothill Pine (BOFP). As a secondary component to the BOFP is coniferous habitat classified as part of the Klamath Mixed Conifer type. Brief descriptions of these habitats follow in this addendum.

WILDLIFE SPECIES

TES SPECIES

Review of information available from the NDDB and USFS indicated that there is one known TES species present within the watershed:

- Bald eagle (*Haliaeetus leucocephalus*)

A nesting pair of bald eagles is located near the confluence of West Squaw Creek and Shasta Lake.

Table 1 shows additional documented species of concern adjacent to the watershed (but not known to occur within the watershed boundary), their status, and proximity (miles) from the watershed. Specific habitat information of the species and relative likelihood that they would be present in the watershed is discussed below in Species Habitat Requirements. Individual NDDDB data summary sheets are included in Appendix A.

TABLE 1 Documented Species of Concern Adjacent to West Squaw Creek Watershed				
Species	Federal Status	State Status	DFG Status	Proximity to Watershed
Pacific Fisher (<i>Martes pennanti pacifica</i>)	None	None	Special Concern	3+ Miles northwest
Shasta Salamander (<i>Hydromantes shastae</i>)	None	Threatened	None	1 Mile east

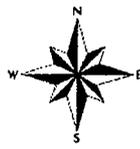
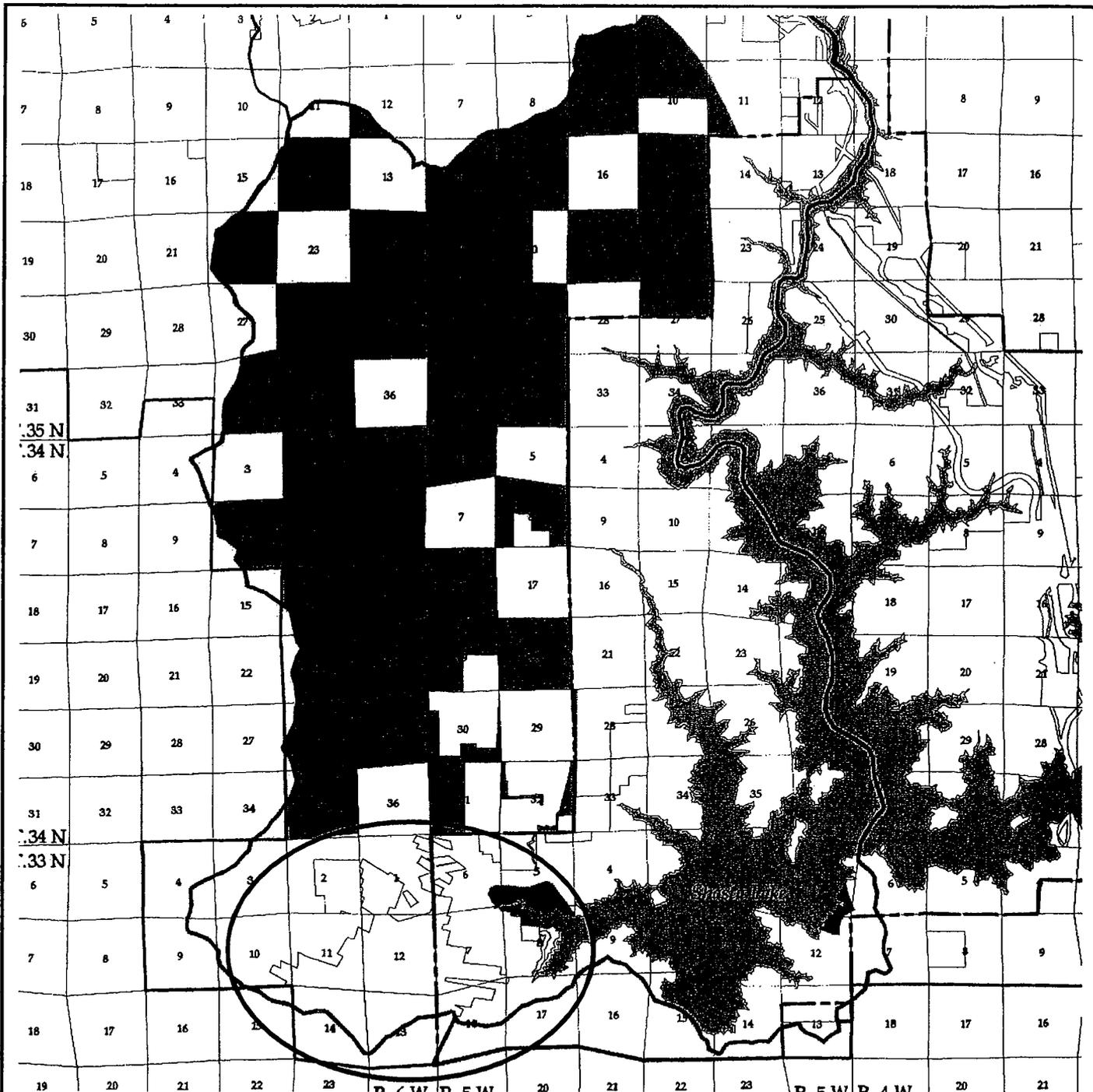
HABITAT CONCERNS

The Blue Oak-Foothill Pine habitat type is the dominate habitat type within the watershed area affected by past mining and addressed in the UAA. These consist of an assemblage of shrub, grass, conifer and hardwood species that form a multilayered forest predominated by blue oak and foothill pine (WHR, 1999). In lower elevations blue oak tends to dominate the overstory, with foothill pine found scattered or in small patches. In areas where foothill pine (also referred to as digger pine) is abundant in the overstory, blue oak is found less often as it is shade intolerant. Associated with these tree species are brush and herbaceous species such as live oak (shrub and tree form), manzanita, ceanothus, poison-oak, and California redbud. Lack of recurrent fire has caused many areas in the watershed to become dense with brush, crowding out young blue oak and foothill pine.

Associated with the BOFP habitat type is the Klamath Mixed Conifer (KMC) habitat. This is found as a secondary habitat type and is not widely found in the watershed. These habitats are generally tall, dense to moderately open, evergreen forests with low growing trees and shrubs. The KMC habitat is typically found at the higher elevations and in sheltered areas where temperatures are cooler and water is more abundant throughout the year; areas such as sheltered north slopes. Vegetation consists of Douglas-fir, ponderosa pine and white fire, mixed with the BOFP vegetation.

A search of the WHR indicated that the BOFP and KMC habitat types found in the West Squaw Creek Watershed could provide potential habitat for 26 wildlife species that are protected by the federal and state government, or are a Species of Special Concern to the state. Table 2 displays those species with potential habitat associated with these habitat types. A description of the habitat requirements for species listed in Table 2 is presented below in Species Habitat Requirements.

The USFS is the other primary landowner in the watershed. The USFS address land use through Land Management Planning Activities that designate specific land allocation types based on habitat and specie concerns. The USFS summarized the land allocation and management directions for the High Complex Fire in 1999, which burned a portion of the West Squaw Creek Watershed. Within the West Squaw Creek Watershed the USFS ownership is either Late-Succession reserve or Administratively Withdrawn. These are included on Figure 5 and defined below.



Scale 1:126720 (1/2 inch = 1 mile)



○ - PROJECT AREA

- Administratively Withdrawn Areas
- Late-Successional Reserves
- Matrix Land
- Matrix Land
- Matrix Land

FIGURE 5
LAND ALLOCATIONS
 WEST SQUAW CREEK
 MINING REMEDIAL RECOVERY COMPANY
 SHASTA COUNTY, CALIFORNIA

SOURCE: USFS

NOT TO SCALE

- Administratively Withdrawn Areas

Administratively Withdrawn Areas are identified in current Forest and District Plans or draft plan preferred alternatives and include recreation and visual areas, back country, and other areas where management emphasis precludes scheduled timber harvest.

- Late-Successional Reserves (LSRs)

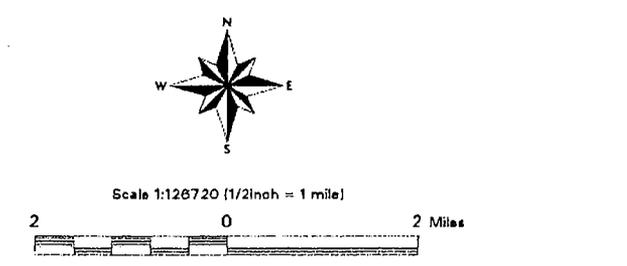
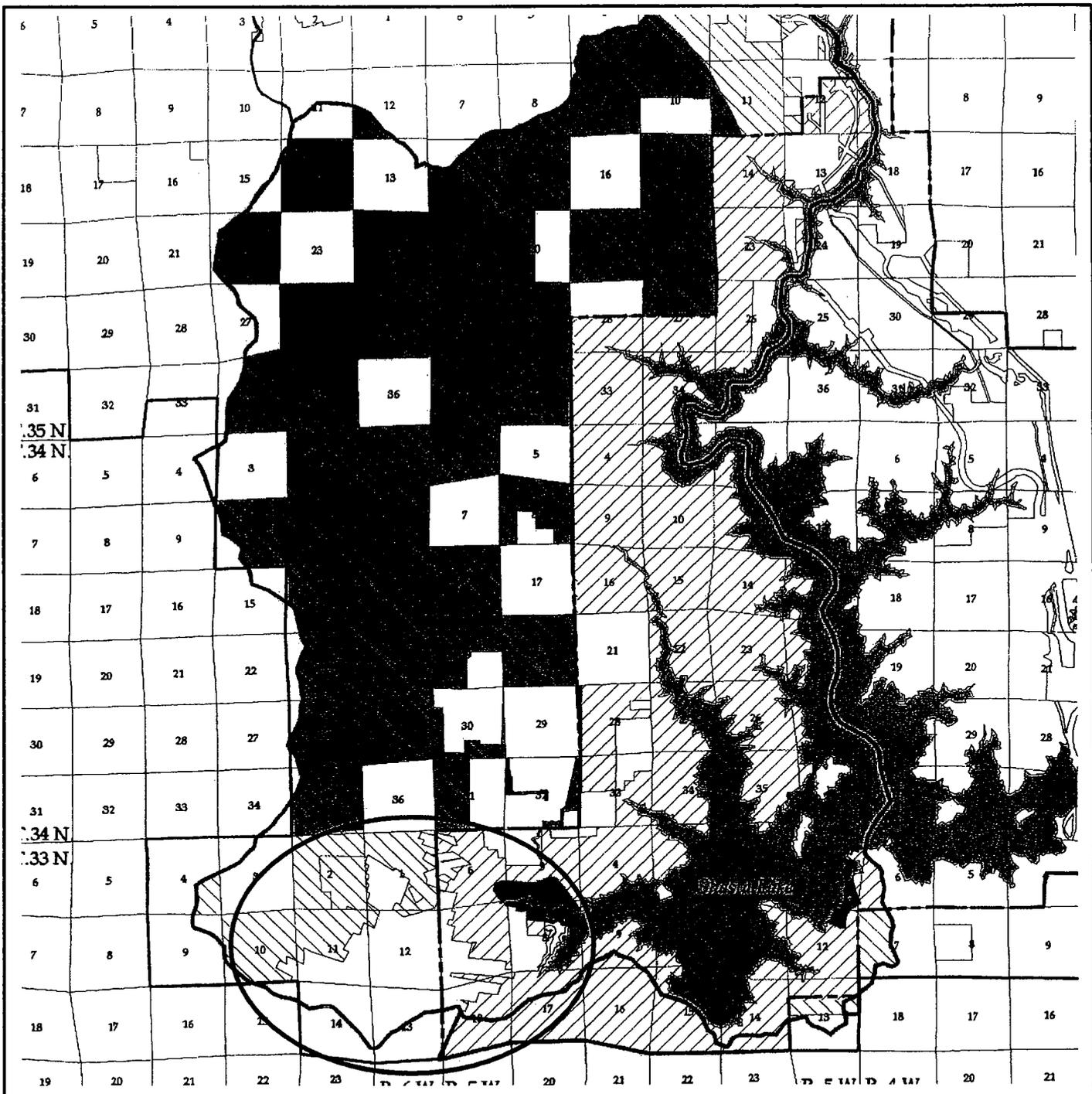
Late-Successional Reserves are areas that have been established to protect and enhance conditions of Late-Successional and old growth forest ecosystems and to insure the support of related species, including the northern spotted owl. Two smaller LSRs (eagle management) are located adjacent to Shasta Lake in the southern portion of the watershed.

The Shasta-Trinity National Forest Land Management Plan (LMP) identified two Management Prescriptions in the Squaw Creek Watershed, which are included in Figure 6 and include (1) I – Limited Roaded Motorized Recreation and (2) II – Wildlife Habitat Management.

Species	Federal Status	State Status	Other Protection Status
Sharp-shinned Hawk (<i>Accipiter striatus</i>)	None	Species of Special Concern	None
Northern Goshawk (<i>Accipiter gentiles</i>)	None	Species of Special Concern	CDF ¹ Sensitive
Bald Eagle (<i>Haliaeetus leucocephalus</i>)	Threatened	Endangered	California Fully Protected
Osprey (<i>Pandion haliaetus</i>)	None	Species of Special Concern	None
Merlin (<i>Falco columbarius</i>)	None	Species of Special Concern	None
Long-eared Owl (<i>Asio otus</i>)	None	Species of Special Concern	None
Western Scrub-jay (<i>Aphelocoma californica</i>)	None	Species of Special Concern	None
Yellow Warbler (<i>Dendrocia petechia</i>)	None	Species of Special Concern	None
California Towhee (<i>Pipilo crissalis</i>)	None	Species of Special Concern	None
Vagrant Shrew (<i>Sorex vagrans</i>)	None	Species of Special Concern	None
Pallid Bat (<i>Antrozous pallidus</i>)	None	Species of Special Concern	None
Townsend's Big-eared Bat (<i>Plecotus townsendii</i>)	None	Species of Special Concern	USFS ² Sensitive
Deer Mouse (<i>Peromyscus maniculatus</i>)	None	Species of Special Concern	None
California Vole (<i>Microtus californicus</i>)	Endangered	Endangered	Species of Special Concern
Red Fox (<i>Vulpes vulpes</i>)	None	Threatened	None
Western Spotted Skunk (<i>Spilogale gracilis</i>)	None	Species of Special Concern	None
Wolverine (<i>Gulo gulo</i>)	None	Threatened	None
California Newt (<i>Taricha torosa</i>)	None	Species of Special Concern	None
Ensatina (<i>Ensatina eschscholtzi</i>)	None	Species of Special Concern	USFS ² Sensitive
Shasta Salamander (<i>Hydromantes shastae</i>)	None	Threatened	California Protected
Foothill Yellow-legged Frog (<i>Rana boylei</i>)	None	California Protected	USFS ² Sensitive
Western Pond Turtle (<i>Clemmys marmorata</i>)	None	California Protected	USFS ² Sensitive
Rubber Boa (<i>Charina bottae</i>)	None	Threatened	California Protected
Gopher Snake (<i>Pituophis melanoleucus</i>)	None	Species of Special Concern	None
California Mtn. Kingsnake (<i>Lampropeltis zonata</i>)	None	California Protected	None
Common Garter Snake (<i>Thamnophis sirtalis</i>)	Endangered	Endangered	California Fully Protected

1-California Department of Forestry and Fire Protection

2-United States Forest Service



- National Recreation Area/Shasta Unit
- Front Management Area
- Rx 2 Limited Roaded Motorized Recreation
- Rx 3 Roaded Recreation
- Rx 6 Wildlife Habitat Management
- Rx 7E Late-Successional Reserves
- Rx 8 Commercial Wood Products Emphasis

- PROJECT AREA

FIGURE 6
USFS MANAGEMENT AREAS AND PRESCRIPTIONS
 WEST SQUAW CREEK
 MINING REMEDIAL RECOVERY COMPANY
 SHASTA COUNTY, CALIFORNIA

SOURCE: USFS

NOT TO SCALE

SPECIES HABITAT REQUIREMENTS

Each of the species documented to be near the project site (from CNDDDB records), or as having potential habitat in the area (from WHR) is briefly described below.

Bald Eagle (*Haliaeetus leucocephalus*)

Habitat for the bald eagle is generally found around the perimeter of permanent bodies of water such as Lake Shasta and its inlets. This species generally nest near the water, in large old-growth or mature trees that have significant branches to support massive nest construction. Nest and perching locations near permanent water offer good feeding opportunities; bald eagles predominantly feed on fish and waterfowl. The bald eagle is not generally found in mountainous terrain away from lakes.

Habitat for the bald eagle exists at the lower extreme of the watershed at Lake Shasta. Tributaries are generally too small to provide fishing or foraging opportunities. The nearest nest site for bald eagles is located near the confluence of Squaw Creek and Lake Shasta. This nest territory has shown some success in producing young; latest NDDB reports show unsuccessful reproduction in 1995-1997.

Pacific Fisher (*Martes pennanti pacifica*)

The pacific fisher is an uncommon resident of northern California forests. Requiring large areas of mature, dense conifer and deciduous riparian forests with snags and canopy closure of greater than 50%, this species is an opportunistic hunter. The fisher utilizes cavities in large trees, snags, logs, and brush piles for cover and denning sites.

The watershed is not considered habitat for this species due to the less than preferred habitat and considerable historic mining that modified portions of the landscape. Limited habitat could exist along the riparian corridors.

Shasta Salamander (*Hydromantes shastae*)

The Shasta salamander is an uncommon species with a specific habitat limited to limestone outcrops and rubble, associated with forest cover and moist sites. Populations are generally not contiguous and occur in this specialized habitat in valley-foothill and conifer forest environments. When surface conditions have the correct combination of humidity, temperature and light, the Shasta salamander can be found near the surface of the limestone deposits, under logs and in fissures. When surface conditions are not optimal, the species retreats into interstitial spaces between rock talus, and into fissures and limestone caves/caverns for protection.

Habitat in the watershed would be limited to limestone outcrops associated with forested vegetation. One specific site is located to the north and outside of the watershed, near the Mammoth Mine.

Sharp-shinned Hawk (*Accipiter striatus*)

This species is a fairly common migrant and winter resident throughout California, except in areas with deep snow. The sharp-shinned hawk prefers habitats of mixed conifer and riparian areas with north facing slopes and down vegetation that can be used as plucking perches. Vegetation requirements for cover and reproduction consist of dense pole stands that are well shaded and have cool moist temperatures near water. The sharp-shinned forages in openings at edges of woodlands, brushy pastures and shorelines.

Habitat is extremely limited in the watershed and this species would generally not be found here. Limited habitat may exist in the surrounding forests, but wildfire and past logging activities have limited the density and cover requirements for this species.

Northern Goshawk (*Accipiter gentiles*)

Habitat for this species consists of dense, mature conifer and deciduous forests, interspersed with meadows, other openings and riparian areas. Nesting requirements are for dense stands on north slopes, near water and close to openings.

There is no habitat in the watershed. The vegetation types are generally not conducive for this species which is generally found in the denser KMC and Sierran Mixed Conifer forests where coniferous forests are dense and offer abundant opportunities for nesting and foraging.

Osprey (*Pandion haliaetus*)

The osprey is only found near open bodies of water (large rivers, lakes and ponds) where fishing opportunities are good. Since the osprey primarily preys on fish, it requires open, clear water for foraging; the osprey will take small mammals, birds and reptiles if fish is not available, but this is uncommon. This species nests in trees that offer opportunities for a platform nest to be constructed. Generally the nest site overlooks the feeding waters.

Habitat is restricted to the shores of Lake Shasta and the birds rarely venture upland into the watershed where foraging opportunities do not exist.

Merlin (*Falco columbarius*)

This species frequents coastlines, open grasslands, savannahs, woodlands, lakes, wetlands and edges of early successional forests. The merlin is rarely found in heavily wooded areas, but will range through ponderosa pine forests and frequents open habitats near water (lakes, coastlines and wetlands) where it hunts for shorebirds.

Habitat for this species is generally limited to areas around Lake Shasta. The forested habitat within the watershed does not provide needed habitat requirements for this species.

Long-eared Owl (*Asio otus*)

This species requires riparian habitat, but will also use live oak thickets and other dense stands of trees for roosting and nesting. The long-eared owl usually hunts in open areas adjacent to dense stands of trees; the species will occasionally forage in forested habitats.

The long-eared owl could have limited habitat around riparian areas. Openings are limited and scattered, not associated with adjacent dense stands of timber.

Western Scrub-jay (*Aphelocoma californica*)

The western scrub-jay is a common yearlong resident of California. This species prefers scrub habitats with oak, chaparral, hardwoods and foothill conifer communities. Since the scrub-jay generally eats acorns, seeds, insects and invertebrates it requires vegetation that can support its nutritional needs, so oak is a preferred component.

Habitat is scattered in the watershed and found generally at the lower elevations associated with riparian areas.

Yellow Warbler (*Dendrocia petechia*)

A common to uncommon summer resident in the watershed, the yellow warbler prefers deciduous riparian habitats in the summer and medium-density woodlands for breeding. Foraging occurs mainly in and around riparian areas where it eats insects and spiders.

Habitat in the watershed is limited to riparian corridors and some upslope habitats in close proximity.

California Towhee (*Pipilo crissalis*)

This species is a common resident of foothills and lowlands in California that frequents open chaparral as well as hardwood-conifer habitats. Preferring shrubs in broken chaparral, willow thickets and brushy margins of open wooded habitat, the California towhee feeds on seeds and insects.

Habitat in the watershed will be associated with riparian areas and brushlands near open hardwood and conifer forests.

Vagrant Shrew (*Sorex vagrans*)

A widespread and common species in northern California, the vagrant shrews' optimal habitats are found in valley foothill and montane riparian areas, aspen groves, wet meadows, annual and perennial wetlands, and emergent wetlands. This species is also found in wooded habitats. The vagrant shrew prefers dense litter or ground cover, such as down logs, to hide and nest in.

With its widespread range, habitat is likely to occur in the watershed.

Pallid Bat (*Antrozous pallidus*)

The pallid bat is very common at low elevations in surrounding foothills and forests. While its preferred habitats are lower elevations of grasslands, shrublands, and woodlands, the pallid bat is occasionally found in mixed conifer forests. Like most bats, this species requires caves, crevices, mines and the occasional hollow tree for roosting. This species is commonly found in open dry habitats with rock outcrops.

Numerous mines in the vicinity of the containment facility would be likely habitat for the pallid bat. Additional roosting sites could be found in hollow trees or trees with loose and sloughing bark.

Townsend's Big-eared Bat (*Plecotus townsendii*)

This bat is found throughout California and may be seen at any time of the year in its range. This species is most abundant in mesic habitats and requires caves, mines, tunnels and other man-made structures for roosting. The Townsend's big-eared bat eats small moths as its primary food source, though it will glean insects from foliage.

With the numerous mines in the watershed, this species would likely find suitable habitat.

Deer Mouse (*Peromyscus maniculatus*)

As noted in the WHR, the deer mouse is “*abundant or common throughout California in virtually all habitats. Most ubiquitous and abundant mammal in California and North America*” (WHR, 1999). It is likely that this species inhabits the watershed. The species is found in all habitat types from early seral stage to late successional forests, riparian areas, woodlands, grasslands and agricultural areas. Hiding cover and nest sites are found in brush piles, litter, logs, rock and just about any available ground cover.

California Vole (*Microtus californicus*)

Found in a wide variety of habitat, the California vole is most abundant in early seral stages of montane riparian, dense annual grasslands, and wet meadows. The vole mainly feeds on parts of leafy grasses, sedges and other low growing herbs. This species is a ground dweller, seeking cover in dense grass, brush piles, under logs and in underground burrows. Nesting occurs underground.

Habitat is limited to non-existent as the California vole needs meadows and grasslands with friable soils to nest, forage and find cover. Habitat of this type is limited to open areas around riparian areas and wetlands.

Red Fox (*Vulpes vulpes*)

The red fox is rare in the Sierra Nevada and only its sub-species, *Vulpes vulpes necator*, is expected to be found in the project area. Requiring dense vegetation and rocky areas for cover and denning sites, the red fox can be found in a variety of forested habitats including mixed conifer. Studies of the red fox in the Sierra Nevada showed that they preferred forests that were interspersed with meadows and alpine fell-fields. These open areas provide opportunities for hunting and foraging while the adjacent forests provide cover.

Habitat requirements are extremely limited in the watershed. While it would not be uncommon to find red fox in forested areas at higher elevations, without the required habitat elements for hunting, cover and denning, the area would only provide for transition between habitats, or dispersal of young.

Western Spotted Skunk (*Spilogale gracilis*)

A permanent resident in its habitats, the western spotted skunk prefers shrub and brush habitats with moderate canopy closure; this species is also associated with open forests and woodlands with scattered openings and riparian habitats. Nesting in cavities of trees, snags, logs, rock piles and stumps, this species requires a diverse interspersion of cover in open brush and forest habitats.

Habitat is very limited in the watershed, as most of the watershed is comprised of dense vegetation. Limited down logs and snags exists for nesting and cover requirements.

Wolverine (*Gulo gulo*)

The wolverine is a very secretive mammal that few have sited in California, and habitat distribution is poorly understood. Sightings in the northern Sierra Nevada range have been made at elevations ranging from 4,300 to 7,300 feet. The species is rarely seen because it seeks out areas of low human disturbance, generally preferring denser mature forests.

Habitat for this species does not exist in the watershed; limited habitat for dispersal of individuals may exist at upper elevations in denser forested stands.

California Newt (*Taricha torosa*)

Occurring primarily in habitats such as the BOFP, there is an isolated population of the California newt known to exist at the headwaters of Lake Shasta (WHR, 1999). Optimal habitat occurs around intermittent streams, rivers ponds and lakes and consists of both terrestrial and aquatic habitats. On land, individuals seek cover under rocks and logs, or in mammal burrows and rock fissures. Breeding and egg laying must occur in water, where eggs are laid and attached to submerged twigs and rocks. During the aquatic larval stage, the larvae find shelter under submerged rocks, logs and undercut banks.

Habitat for the California newt is restricted to riparian areas where water is available for various life stage needs.

Ensatina (*Ensatina eschscholtzi*)

This terrestrial amphibian prefers moist soils, and down material such as rocks, logs and moist leaf litter. Not associated with saturated soils or streams, the ensatina is found to a lesser degree in hardwood-conifer and chaparral habitats. Feeding primarily on spiders and insects, the ensatina needs moist conditions to survive, as it loses body water rapidly in dry substrate conditions. During periods of dry surface conditions, the ensatina finds shelter in rodent burrows and other moist underground areas.

Habitat is restricted to riparian areas where conditions are generally moist throughout the year or in upland forests where moist soil conditions are found.

Foothill Yellow-legged Frog (*Rana boylei*)

The foothill yellow-legged frog is found in or near rocky streams in several habitats in California, including BOFP and KMC. Water is essential for the foothill yellow-legged frogs' survival, as adults bask on rocks near streams, and take cover in water under submerged rocks or sediment. Breeding and egg laying takes place in water where eggs are attached to gravel or rocks in moving water near stream edges. While adults mainly eat aquatic and terrestrial insects, they have been found to eat snails. This species is rarely found far from permanent water and during cold weather, the adults will shelter under rocks in streams or adjacent shorelines.

Habitat in West Squaw Creek Watershed is limited to unaffected active streams that have rocky terrain.

Western Pond Turtle (*Clemmys marmorata*)

This species is usually associated with permanent bodies of water, such as rivers, lakes, irrigation ditches and some pools of mountain streams. The western pond turtle requires basking sites next to deep water where it can hide from predators. As an omnivore, the pond turtle eats vegetation, insects, invertebrates, fish and frogs. Eggs are laid in sandy soil at the waters edge or in upland locations near water, where conditions are similar.

Minimal habitat exists in the watershed, predominantly near the confluence of Squaw Creek with Lake Shasta. The balance of the watershed does not provide adequate habitat.

Rubber Boa (*Charina bottae*)

The rubber boa is found throughout most of northern California in a variety of habitats such as: red fir, ponderosa pine, Douglas-fir, redwood, mixed conifer, hardwood, hardwood-conifer and riparian forests. This species is also found in chaparral and wet meadow habitats. Individuals can usually be found under loose vegetation or down woody material and under rotting logs associated with streams, wet meadows or other areas that provide moist environments.

Riparian areas and sites where down woody material and rotting logs are found provide habitat in the watershed.

California Whipsnake (*Masticophis lateralis*)

The California whipsnake (formerly called the striped racer) has its northern habitat terminus at Shasta Lake. Its preferred habitat is mixed chaparral, chemise-redshank chaparral and valley-foothill riparian habitats. It occasionally uses mixed conifer forest habitat, utilizing riparian areas for foraging.

Marginal habitat is present along creeks within the watershed, where its preferred prey base (frogs, lizards, rodents) is located.

Gopher Snake (*Pituophis melanoleucus*)

As California's most widespread and common snake, the gopher snake is found in all habitat types. The species prefers sparse and open grasslands and is less common, or absent altogether, in denser forested lands. They seek cover in rodent burrows, under rocks, logs and boards.

The watershed is not ideal habitat for the gopher snake, but it would not be uncommon to find individuals here, primarily associated with vegetation openings.

California Mountain Kingsnake (*Lampropeltis zonata*)

The California mountain kingsnake is uncommon throughout northern California and occurs in a variety of habitats including valley-foothill hardwoods, mixed montane chaparral, valley-foothill riparian, coniferous forests and wet meadows. The most common location to site the kingsnake is near rocks or boulders around streams or lakeshores.

Habitat is limited in the watershed to riparian areas surrounding creeks and at the mouth of Squaw Creek at Lake Shasta.

Common Garter Snake (*Thamnophis sirtalis*)

This species is abundant in northern California when associated with permanent or semi-permanent bodies of water. It utilizes holes and burrows created by other animals as hiding and denning areas. Riparian related species of frogs, fish, mice, and earthworms are an important food source, limiting the common garter snakes range.

Limited habitat for this species can be expected in riparian areas lower in the watershed near Lake Shasta.

FISHERIES

West Squaw Creek below the mine area has not supported a fishery since mining began in the late 1800s. West Squaw Creek is considered a "dead" stream in most documents reviewed. The biological evaluation conducted by DFG for the UAA showed increases in macro invertebrates and return of fish to certain reaches.

One of the potential beneficial uses of West Squaw Creek includes cold-water fishery. Good cold-water physical habitat was confirmed in the physical habitat assessment conducted by DFG. Acid Rock Drainage continues to degrade portions of West Squaw Creek.

Shasta Lake has both a warm-water and cold-water fishery. Spotted bass, smallmouth bass, black crappie, channel catfish and bluegill dominate the warmwater fishery. The coldwater fishery is composed of rainbow trout, brown trout, and Chinook salmon. Native species such as white sturgeon, Sacramento blackfish, hardhead minnow, riffle sculpin, Sacramento sucker, and Sacramento squawfish are also present, but receive little fishing pressure. Fish habitat for warm water species is limited by the lack of cover and reservoir drawdown. Habitat for coldwater species is considered good.

Below Shasta Dam the Sacramento River is habitat for an anadromous fishery that includes five runs of Chinook salmon and steelhead.

SENSITIVE PLANT SPECIES

There are no known populations of Threatened, Endangered, Sensitive or Survey & Manage Plant species in the West Squaw Creek Watershed. Based on USFS records, there are also no known populations of Survey & Manage Bryophytes or Fungi. There are two populations of *Arnica venosa* (veiny arnica), a forest endemic plant species, in the vicinity of Shasta Lake but not confirmed in the West Squaw Creek Watershed.

Survey and Manage species that may or do occur in the Shasta Lake West Watershed are shown in Table 3. Only Survey & Manage species with potential habitat in this watershed were addressed in this table. Several fungi and one vascular plant were not mentioned due to a lack of late-successional and old-growth habitat at higher elevations.

CONCLUSIONS

After review of available information regarding TES wildlife species known to exist in and around the West Squaw Creek Watershed and information regarding potential habitat for wildlife in the area, it does not appear that any wildlife species or its habitat will be adversely affected by any redesignation of beneficial use or change in receiving water concentration proposed in the UAA. Significant modifications of the site through historic mining activities have reduced habitat for many species, especially aquatic related.

TABLE 3
Potential Habitat for Special Status Plants, Bryophytes & Fungi
In the Squaw Creek Watershed

Species	Status	Habitat	Nearest population to watershed
Vascular Plants			
Arnica venosa Veiny arnica	Endemic	Hot dry slopes under p. pine, black oak and Doug fir. Usually on N-facing aspects or ridgetops. Elevation: 1500-5000 feet.	There are populations in 14-5, T35N, R5W, S 32. 14-30, T33N, R5W, S7&8, and T33N, R6W, S12.
Cypripedium fasciculatum Clustered lady's slipper	Sensitive S&M Strategy 1&2	Mixed conifer or oak forests on a variety of soil types, often but not always associated with streams; 1300-6000 feet elev. Widespread but sporadic.	No known populations on the Shasta side of the forest. There are several populations on the Trinity side of the forest.
Cypripedium montanum Mountain lady's slipper	Sensitive S&M Strategy 1&2	Mixed conifer or oak forests on a variety of soil types, often but not always associated with streams; 1300-6000 feet elev. Widespread but sporadic.	There is one known population along the Soda Creek Rd., approx. 18 miles N/E of the watershed.
Lewisia cantelovii Cantelow's lewisia	Sensitive	Moist rock outcrops in broad-leaf & conifer forests; elev. 500 to 3000 feet.	There are two populations near Lamoine, approx. 4 miles north of the watershed.
Neviusia cliftonii Shasta snow-wreath	Sensitive	North-facing slopes on limestone-derived soils, within riparian zones; Elev. 2400 to 3000 feet?	3 miles east in Waters Gulch. There is a small amount of limestone outcrop in Big Backbone Ck. And Little Backbone Ck.
Bryophytes			
Ptilidium californicum Pacific fuzzwort	S&M	White fir, Douglas fir, red fir, tanoak; small to large dbh trees, snags, stumps above 3,500 ft.	One population occurs approximately 11 miles north of the watershed in the Halls Gulch drainage.
Fungi			
Otidea leporina, O. onotica, O. smithii Rabbit ears, donkey ears	S&M PB	Moist, cooler late-successional conifer forests	Del Norte and Humboldt Co. O. leporine, Near Sims; w. slope Sacramento River above tributary to Mears Ck.
Polyozellus multiplex Blue chanterelle	S&M PB	Associated with roots of true fir (<i>Abies</i> spp.), Mid elevation, late-successional.	Humboldt Co., Hoopa Indian Reservation
Sarcosoma mexicana Poor mans licorice/ Giant gel cup	PB Strategy 1,2 &PB	On rotting wood or duff under conifers at low to high elevations	Siskiyou Co., Belnap Springs, NE of McCloud
Note : Source USFS October, 2000			

APPENDIX A

NDDB Condensed Reports

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Natural Diversity Data Base

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BOHEMOTASH MTN.

HYDROMANTES SHASTAE
SHASTA SALAMANDER
Element Code: AAAAD09030

-----List Status-----NDDB Element Ranks-----Other Lists-----
Federal: None Global: G1G2 CDFG Status:
State: Threatened State: S1S2

-----Habitat Associations-----

General: COOL, WET RAVINES AND VALLEYS; DOMINANT VEGETATION IS OAK WOODLAND OR CHAPARRAL, ALSO PINE AND FIR; 100 TO 2550 FT ELEV.
Micro: SEEK COVER UNDER SURFACE OBJECTS SUCH AS LOGS, ROCKS, AND LIMESTONE SLABS OR TALUS, NEAR LIMESTONE FISSURES OR CAVES.

Occurrence No. 12 Map Index:09110 ---Dates Last Seen--- Lat/Long: 40°45'35" / 122°27'07" Township: 33N
Occ Rank: Unknown Element: 1978-03-XX UTM: Zone-10 N4512017 E546260 Range: 05W
Origin: Natural/Native occurrence Site: 1978-03-XX Precision: NON-SPECIFIC Section: 32 Qtr SE
Presence: Presumed Extant Symbol Type: POINT Meridian: M
Trend: Unknown Radius: 1/5 mile Elevation: 2900 ft
Main Source: BOGENER, D. 1979 (LIT)
Quad Summary: BOHEMOTASH MTN. (4012274/665C)
County Summary: SHASTA
SNA Summary: Butcher Creek
Location: HEAD OF BUTCHER CREEK AT JUNCTION OF MAMMOTH BUTTE ROAD & JEEP TRAIL TO MAMMOTH MINE.

-----Comments-----

Distribution:
Ecological: 2 INDIVIDUALS OBS ON LIMESTONE OUTCROP. TOTAL AREA OF LIMESTONE HABITAT IS LESS THAN 25 ACRES. 2 INDIVIDUALS FOUND HERE IN 1977.
Threat: FORMER MINE SITE, EXTENSIVE HABITAT LOSS, VEGETATION & TOPSOIL WASHED AWAY.
General:
Owner/Manager: UNKNOWN

Occurrence No. 13 Map Index:09148 ---Dates Last Seen--- Lat/Long: 40°46'16" / 122°26'31" Township: 33N
Occ Rank: Unknown Element: 1978-03-XX UTM: Zone-10 N4513287 E547096 Range: 05W
Origin: Natural/Native occurrence Site: 1978-03-XX Precision: NON-SPECIFIC Section: 28 Qtr SW
Presence: Presumed Extant Symbol Type: POINT Meridian: M
Trend: Unknown Radius: 1/5 mile Elevation: 2000 ft
Main Source: BOGENER, D. 1979 (LIT)
Quad Summary: BOHEMOTASH MTN. (4012274/665C)
County Summary: SHASTA
SNA Summary: Golinsky Mine
Location: GOLINSKY MINE. ABANDONED QUARRY ON SLOPES OF MAMMOTH BUTTE WEST OF SHASTA LAKE.

-----Comments-----

Distribution: 4 INDIVIDUALS OBS IN LIMESTONE RUBBLE OF QUARRY. 2 INDIVIDUALS AT SMALL OUTCROP ON SLOPE BELOW GOLINSKY MINE FACING BACKBONE INLET. 2 INDIVIDUALS FOUND AT HEAD OF BUTCHER CREEK IN 1977.
Ecological: TOTAL AREA OF LIMESTONE HABITAT IS LESS THAN 25 ACRES.
Threat: FORMER MINE SITE, EXTENSIVE HABITAT LOSS.
General:
Owner/Manager: UNKNOWN

Occurrence No. 14 Map Index:09237 ---Dates Last Seen--- Lat/Long: 40°47'26" / 122°24'54" Township: 34N
Occ Rank: Unknown Element: 1978-03-XX UTM: Zone-10 N4515468 E549343 Range: 05W
Origin: Natural/Native occurrence Site: 1978-03-XX Precision: NON-SPECIFIC Section: 22 Qtr SW
Presence: Presumed Extant Symbol Type: POLYGON Meridian: M
Trend: Unknown Area: 545.9 ac Elevation: 2500 ft
Main Source: BOGENER, D. 1979 (LIT)
Quad Summary: BOHEMOTASH MTN. (4012274/665C)
County Summary: SHASTA
SNA Summary: Backbone Ridge
Location: ON BACKBONE RIDGE 7 MILES WEST OF POTTER CRREEK. BETWEEN THE SACRAMENTO RIVER ARM & BIG BACKBONE CREEK INLET, SHASTA LAKE

-----Comments-----

Distribution: SALAMANDERS LIMITED TO A STRIP OF LIMESTONE ABOUT 1.5 MILES LONG AND A FEW HUNDRED FEET WIDE.
Ecological: NO MOIST FOREST AROUND THE LIMESTONE. MUCH OF OUTCROP EXPOSED, LACKS LEAF LITTER, LOGS & MOSS COVERED ROCKS. AREA IN TRANSITIONAL STAGE OF SUCCESSION.
Threat: VEGETATION DENUDED IN EARLY 1900'S BY COPPER SMELTER.
General: 3 SALAMANDERS OBS IN 1978. IN MARCH 1977 A TOTAL OF 22 ADULTS AND JUVENILES OBS. IN MAY 1976, 2 SALAMANDERS OBS IN 2 CAVES.
Owner/Manager: UNKNOWN

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BOHEMOTASH MTN.

HALIAEETUS LEUCOCEPHALUS (NESTING & WINTERING)

BALD EAGLE

Element Code: ABNKC10010

-----List Status-----
Federal: Threatened
State: Endangered

-----NDDB Element Ranks-----
Global: G4
State: S2

-----Other Lists-----
CDFG Status:

-----Habitat Associations-----

General: OCEAN SHORELINES, LAKE MARGINS, AND RIVER COURSES FOR BOTH NESTING AND WINTERING. MOST NESTS WITHIN ONE MILE OF WATER.
Micro: NESTS IN LG, OLD-GROWTH, OR DOMINANT LIVE TREE W/OPEN BRANCHES, ESPECIALLY PONDEROSA PINE. ROOSTS COMMUNALLY IN WINTER.

Occurrence No. 40 Map Index:09289 ---Dates Last Seen--- Lat/Long: 40°50'35" / 122°23'21" Township: 35N
Occ Rank: Good Element: 1997-XX-XX UTM: Zone-10 N4521309 E551491 Range: 05W
Origin: Natural/Native occurrence Site: 1997-XX-XX Precision: NON-SPECIFIC Section: 36 Qtr SW
Presence: Presumed Extant Symbol Type: POINT Meridian: M
Trend: Stable Radius: 1/10 mile Elevation: 1800 ft
Main Source: DEPT. OF FISH & GAME 1986 (PERS)
Quad Summary: BOHEMOTASH MTN. (4012274/665C)
County Summary: SHASTA
SNA Summary:
Location: SALT CREEK TERRITORY; ALONG THE SACRAMENTO RIVER ARM OF SHASTA LAKE, SOUTH OF SALT CREEK INLET.
-----Comments-----
Distribution:
Ecological: NESTING TERRITORY.
Threat:
General: DISCOVERED IN 1977; OCCUPIED 1977-1990, EXCEPT FOR 1980, 1987, AND 1989. STATUS UNKNOWN IN 1991. UNOCCUPIED IN 1992. 1 YOUNG FLEDGED IN 1993 AND 1994. OCCUPIED/UNSUCCESSFUL, 1995-97.
Owner/Manager: USFS-SHASTA/TRINITY NF

Occurrence No. 116 Map Index:09210 ---Dates Last Seen--- Lat/Long: 40°50'41" / 122°25'29" Township: 35N
Occ Rank: Unknown Element: 1976-XX-XX UTM: Zone-10 N4521467 E548496 Range: 05W
Origin: Natural/Native occurrence Site: 1978-XX-XX Precision: NON-SPECIFIC Section: 34 Qtr XX
Presence: Presumed Extant Symbol Type: POINT Meridian: M
Trend: Unknown Radius: 1 mile Elevation: 1065 ft
Main Source: DEPT. OF FISH & GAME 1986 (PERS)
Quad Summary: BOHEMOTASH MTN. (4012274/665C)
County Summary: SHASTA
SNA Summary:
Location: SUGARLOAF BAY; ALONG THE SACRAMENTO RIVER ARM OF SHASTA LAKE
-----Comments-----
Distribution:
Ecological: NESTING TERRITORY
Threat: POTENTIAL DISTURBANCE: AN ACCESS ROAD PASSES LESS THAN 100 YDS UPSLOPE OF NEST TREE.
General: DISCOVERED IN 1975, BUT REPORTED AS ACTIVE SINCE AT LEAST 1971. TERRITORY WAS OCCUPIED 1975-76, BUT REPORTEDLY UNOCCUPIED 1977-78. SUITABLE NESTING TERRITORY WITH INTACT NEST. NO RECENT SURVEY DATA. MANAGEMENT PLAN WRITTEN.
Owner/Manager: USFS-SHASTA/TRINITY NF

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SHASTA DAM

HALIAEETUS LEUCOCEPHALUS (NESTING & WINTERING) BALD EAGLE Element Code: ABNKC10010	-----List Status----- Federal: Threatened State: Endangered	-----NDDB Element Ranks----- Global: G4 State: S2	-----Other Lists----- CDFG Status:
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-----Habitat Associations-----
General: OCEAN SHORELINES, LAKE MARGINS, AND RIVER COURSES FOR BOTH NESTING AND WINTERING. MOST NESTS WITHIN ONE MILE OF WATER.
Micro: NESTS IN LG, OLD-GROWTH, OR DOMINANT LIVE TREE W/OPEN BRANCHES, ESPECIALLY PONDEROSA PINE. ROOSTS COMMUNALLY IN WINTER.

Occurrence No. 150 Map Index:30701 ---Dates Last Seen--- Lat/Long: 40°44'04" / 122°27'10" Township: 33N
Occ Rank: Unknown Element: 1997-XX-XX UTM: Zone-10 N4509216 E546194 Range: 05W
Origin: Natural/Native occurrence Site: 1997-XX-XX Precision: NON-SPECIFIC Section: 08 Qtr NE
Presence: Presumed Extant Symbol Type: POINT Meridian: M
Trend: Unknown Radius: 1/5 mile Elevation: 1400 ft
Main Source: DEPT. OF FISH & GAME 1997 (PERS)
Quad Summary: SHASTA DAM (4012264/647B)
County Summary: SHASTA
SNA Summary:
Location: LITTLE SQUAW TERRITORY; BETWEEN LITTLE SQUAW CREEK AND DRY FORK, SW OF SHASTA LAKE
-----Comments-----
Distribution:
Ecological:
Threat:
General: DISCOVERED IN 1990; OCCUPIED/UNSUCCESSFUL. OCCUPIED/UNSUCCESSFUL IN 1991. 1 YOUNG FLEDGED IN 1992.
OCCUPIED/SUCCESS UNKNOWN IN 1993. 1 FLEDGED IN 1994. OCCUPIED/UNSUCCESSFUL, 1995-97.
Owner/Manager: NPS-W/S/T NRA

Occurrence No. 205 Map Index:41123 ---Dates Last Seen--- Lat/Long: 40°44'22" / 122°22'19" Township: 33N
Occ Rank: Unknown Element: 1996-XX-XX UTM: Zone-10 N4509835 E553026 Range: 04W
Origin: Natural/Native occurrence Site: 1997-XX-XX Precision: NON-SPECIFIC Section: 06 Qtr SW
Presence: Presumed Extant Symbol Type: POINT Meridian: M
Trend: Unknown Radius: 2/5 mile Elevation: 1400 ft
Main Source: DEPT. OF FISH & GAME 1997 (PERS)
Quad Summary: PROJECT CITY (4012263/647A)*, SHASTA DAM (4012264/647B)
County Summary: SHASTA
SNA Summary:
Location: FROST GULCH TERRITORY; FROST GULCH, 4 MILES NORTH OF PROJECT CITY.
-----Comments-----
Distribution:
Ecological:
Threat:
General: DISCOVERED IN 1994; 2 YOUNG FLEDGED. OCCUPIED/UNSUCCESSFUL IN 1995. 2 YOUNG FLEDGED IN 1996. UNOCCUPIED IN 1997.
Owner/Manager: NPS-W/S/T NRA

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WHISKEYTOWN

MARTES PENNANTI PACIFICA
PACIFIC FISHER
Element Code: AMAJF01021

-----List Status-----NDDB Element Ranks-----Other Lists-----
Federal: None Global: G3G4 CDFG Status: SC
State: None State: S2S3

~~Habitat Associations~~

General: INTERMEDIATE TO LARGE-TREE STAGES OF CONIFEROUS FORESTS & DECIDUOUS-RIPARIAN AREAS W/ HIGH PERCENT CANOPY CLOSURE.
Micro: USE CAVITIES, SNAGS, LOGS & ROCKY AREAS FOR COVER & DENNING. NEED LARGE AREAS OF MATURE, DENSE FOREST.

Occurrence No. 74 Map Index:08642 ---Dates Last Seen--- Lat/Long: 40°38'34" / 122°37'37" Township: 32N
Occ Rank: Unknown Element: 1979-10-21 UTM: Zone-10 N4498958 E531544 Range: 07W
Origin: Natural/Native occurrence Site: 1979-10-21 Precision: NON-SPECIFIC Section: 11 Qtr XX
Presence: Presumed Extant Symbol Type: POINT Meridian: M
Trend: Unknown Radius: 1 mile Elevation: 1600 ft
Main Source: DEPT. OF FISH & GAME 1987 (OBS)
Quad Summary: FRENCH GULCH (4012266/648B)*, WHISKEYTOWN (4012265/648A)
County Summary: SHASTA
SNA Summary:
Location: 2 MILES SOUTHWEST OF WHISKEYTOWN LAKE.
~~Comments~~
Distribution:
Ecological:
Threat:
General: OBSERVED BY CDFG BIOLOGIST.
Owner/Manager: NPS-W/S/T NRA

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WHISKEYTOWN

SEDUM PARADISUM

CANYON CREEK STONECROP
Element Code: PDCRA0A0U3

—List Status—	—NDDB Element Ranks—	—Other Lists—
Federal: None	Global: G1	CNPS List: 1B
State: None	State: S1.3	R-E-D Code: 3-1-3

—Habitat Associations—

General: CHAPARRAL, LOWER MONTANE CONIFEROUS FOREST, SUBALPINE CONIFEROUS FOREST, BROADLEAFED UPLAND FOREST.
Micro: ROCK FACES, IN CREVICES OF EXPOSED GRANITE. 1060-1860M.

Occurrence No. 5 Map Index:08772 —Dates Last Seen— Lat/Long: 40°44'36" / 122°35'27" Township: 33N
Occ Rank: Excellent Element: 1992-05-28 UTM: Zone-10 N4510131 E534539 Range: 06W
Origin: Natural/Native occurrence Site: 1992-05-28 Precision: SPECIFIC Section: 06 Qtr SW
Presence: Presumed Extant Symbol Type: POLYGON Meridian: M
Trend: Unknown Area: 17.3 ac Elevation: 3500 ft
Main Source: JOKERST, J. 1981 (OBS)
Quad Summary: WHISKEYTOWN (4012265/648A)
County Summary: SHASTA
SNA Summary: ShirtTail Peak
Location: NE FACE OF SHIRTTAIL PEAK (3 MI NE OF TOWN OF FRENCH GULCH).

—Comments—

Distribution: POPULATION IS CENTERED IN THE AREA OF EXPOSED ROCK ABOUT 0.25 MILES NORTHEAST OF THE PEAK'S SUMMIT ALONG THE RIDGELINE.
Ecological: EXPOSED BEDROCK OUTCROPS SURROUNDED BY CHAPARRAL. ASSOCIATED WITH SEDUM SPATHULIFOLIUM, PELLAEA MUCRONATA, QUERCUS CHRYSOLEPIS, GARRYA FREMONTII, CERCOCARPUS SPP., PSEUDOTSUGA MENZIESII, ETC.
Threat: NO THREATS ANTICIPATED.
General: 175 PLANTS SEEN IN 1992 AT SOUTH END OF OCCURRENCE.
Owner/Manager: BLM-REDDING RA

Occurrence No. 7 Map Index:31496 —Dates Last Seen— Lat/Long: 40°44'15" / 122°35'50" Township: 33N
Occ Rank: Good Element: 1992-05-28 UTM: Zone-10 N4509493 E534015 Range: 07W
Origin: Natural/Native occurrence Site: 1992-05-28 Precision: SPECIFIC Section: 12 Qtr NE
Presence: Presumed Extant Symbol Type: POINT Meridian: M
Trend: Unknown Radius: 80 meters Elevation: 3680 ft
Main Source: MOLTER, J. 1992 (OBS)
Quad Summary: WHISKEYTOWN (4012265/648A)
County Summary: SHASTA
SNA Summary:
Location: SW SIDE OF SHIRTTAIL PEAK, ON NW SLOPES OF SW-TENDING RIDGE.

—Comments—

Distribution: ALSO FOUND IN T33N R06W NW 1/4 OF NW 1/4 OF SECTION 7. ON SECTION LINE.
Ecological: ON SILTSTONE OUTCROPS WITH COMANDRA UMBELLATA, SILENE CALIFORNICA, CEANOTHUS CUNEATUS, ARCTOSTAPHYLOS PATULA, GARRYA FREMONTII, CERCOCARPUS SPP., AND QUERCUS CHRYSOLEPIS.
Threat:
General: 18 PLANTS IN 1992.
Owner/Manager: BLM

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SCHELL MOUNTAIN

MARTES PENNANTI PACIFICA
PACIFIC FISHER
Element Code: AMAJF01021

—List Status—	—NDDB Element Ranks—	—Other Lists—
Federal: None	Global: G3G4	CDFG Status: SC
State: None	State: S2S3	

—Habitat Associations—

General: INTERMEDIATE TO LARGE-TREE STAGES OF CONIFEROUS FORESTS & DECIDUOUS-RIPARIAN AREAS W/ HIGH PERCENT CANOPY CLOSURE.
Micro: USE CAVITIES, SNAGS, LOGS & ROCKY AREAS FOR COVER & DENNING. NEED LARGE AREAS OF MATURE, DENSE FOREST.

Occurrence No. 393	Map Index:33628	—Dates Last Seen—	Lat/Long: 40°49'58" / 122°33'27"	Township: 34N
Occ Rank: Excellent		Element: 1996-12-27	UTM: Zone-10 N4520081 E537311	Range: 06W
Origin: Natural/Native occurrence		Site: 1996-12-27	Precision: NON-SPECIFIC	Section: 04 Qtr NW
Presence: Presumed Extant			Symbol Type: POINT	Meridian: M
Trend: Unknown			Radius: 1/5 mile	Elevation: 4720 ft

Main Source: HUGHES, K. 1996 (OBS)
Quad Summary: SCHELL MTN. (4012275/666D)
County Summary: SHASTA
SNA Summary:
Location: WILD COW MOUNTAIN, APPROXIMATELY 10 MILES NE OF FRENCH GULCH.

—Comments—
Distribution:
Ecological: HABITAT CONSISTS OF OLD GROWTH (NEVER HARVESTED), MIXED CONIFER FOREST.
Threat: THREATENED BY TIMBER HARVEST.
General: 1 ADULT OBSERVED/IDENTIFIED VIA REMOTE CONTROL CAMERA PHOTO.
Owner/Manager: BLM

Occurrence No. 395	Map Index:33659	—Dates Last Seen—	Lat/Long: 40°49'52" / 122°37'11"	Township: 34N
Occ Rank: Good		Element: 1997-01-24	UTM: Zone-10 N4519871 E532065	Range: 07W
Origin: Natural/Native occurrence		Site: 1997-01-24	Precision: NON-SPECIFIC	Section: 02 Qtr NE
Presence: Presumed Extant			Symbol Type: POINT	Meridian: M
Trend: Unknown			Radius: 1/5 mile	Elevation: 4000 ft

Main Source: HUGHES, K. 1997 (OBS)
Quad Summary: SCHELL MTN. (4012275/666D)
County Summary: SHASTA
SNA Summary:
Location: EAST SLOPE OF HONEYMOON RIDGE, 8.5 MILES NORTH OF FRENCH GULCH.

—Comments—
Distribution:
Ecological: HABITAT CONSISTS OF A MIXED CONIFER FOREST, WITH A SPARSE CANOPY CLOSURE. SELECTIVE HARVEST REMOVED MOST OF THE LARGE TREES.
Threat: THREATENED BY TIMBER HARVEST.
General: 1 ADULT DETECTED VIA REMOTE CAMERA ON 24 JANUARY 1997.
Owner/Manager: BLM

Occurrence No. 401	Map Index:37983	—Dates Last Seen—	Lat/Long: 40°47'23" / 122°34'04"	Township: 34N
Occ Rank: Good		Element: 1994-12-30	UTM: Zone-10 N4515281 E536471	Range: 06W
Origin: Natural/Native occurrence		Site: 1994-12-30	Precision: SPECIFIC	Section: 20 Qtr NE
Presence: Presumed Extant			Symbol Type: POINT	Meridian: M
Trend: Unknown			Radius: 80 meters	Elevation: 4130 ft

Main Source: HUGHES, K. 1995 (OBS)
Quad Summary: SCHELL MTN. (4012275/666D)
County Summary: SHASTA
SNA Summary:
Location: 5.9 MILES SSW OF SCHELL MTN, HEADWATERS OF NORTH FORK EAST FORK TRIB TO EAST FORK CLEAR CREEK, BLM LAND W OF SHASTA NF.

—Comments—
Distribution: APPROX. 7 MILES NE OF FRENCH GULCH.
Ecological: MIXED CONIFER FOREST WITH DOUGLAS FIR AND PONDEROSA PINE, SCATTERED INCENSE CEDAR. SELECTIVELY HARVESTED APPROX. 30 YEARS AGO. OHV USE IN THE AREA.
Threat:
General: 1 ADULT OBSERVED.
Owner/Manager: BLM

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LAMOINE

ASCAPHUS TRUEI TAILED FROG Element Code: AAABA01010	-----List Status----- Federal: None State: None	-----NDDB Element Ranks----- Global: G3G4 State: S2S3	-----Other Lists----- CDFG Status: SC
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-----Habitat Associations-----
General: OCCURS IN MONTANE HARDWOOD-CONIFER, REDWOOD, DOUGLAS FIR & PONDEROSA PINE HABITATS.
Micro: RESTRICTED TO PERENNIAL MONTANE STREAMS. TADPOLES REQUIRE WATER BELOW 15 DEGREES C.

Occurrence No. 28 Map Index: 24249 ---Dates Last Seen--- Lat/Long: 40°59'04" / 122°31'36" Township: 36N
 Occ Rank: Unknown Element: 1994-XX-XX UTM: Zone-10 N4536920 E539828 Range: 06W
 Origin: Natural/Native occurrence Site: 1994-XX-XX Precision: SPECIFIC Section: XX Qtr XX
 Presence: Presumed Extant Symbol Type: POLYGON Meridian: M
 Trend: Unknown Area: 58.0 ac Elevation: 1100 ft
 Main Source: WELSH, H. & A. LIND 1989 (PERS)
 Quad Summary: DAMNATION PEAK (4012285/666A)*, LAMOINE (4012284/665B)
 County Summary: SHASTA
 SNA Summary:
 Location: SOUTH FORK OF SLATE CREEK, TRIBUTARY TO THE SACRAMENTO RIVER, 1.5 MILES NORTH OF DAMNATION PEAK.
 -----Comments-----
 Distribution: 2.5 MILE SECTION OF SOUTH FORK OF SLATE CREEK, BEGINNING IN THE EAST PART OF SEC 15 AND ENDING AT THE EAST BORDER OF SEC 13, SURVEYED IN 1989. 10-FT AND 3-FT TANSECTS SURVEYED IN 1994, PLUS AN INCIDENTAL OBSERVATION.
 Ecological:
 Threat:
 General: UNKNOWN NUMBER OF FROGS FOUND 8/89 AND 10/89 BY WELSH AND LIND. 2 ADULTS AND 19 JUVENILES OBSERVED IN 1994.
 Owner/Manager: USFS-SHASTA/TRINITY NF

Occurrence No. 109 Map Index: 33259 ---Dates Last Seen--- Lat/Long: 40°59'03" / 122°28'25" Township: 36N
 Occ Rank: Unknown Element: 1994-XX-XX UTM: Zone-10 N4536924 E544281 Range: 05W
 Origin: Natural/Native occurrence Site: 1994-XX-XX Precision: NON-SPECIFIC Section: 17 Qtr NW
 Presence: Presumed Extant Symbol Type: POLYGON Meridian: M
 Trend: Unknown Area: 11.5 ac Elevation: 1920 ft
 Main Source: DEPT. OF FISH & GAME 1995 (LIT)
 Quad Summary: LAMOINE (4012284/665B)
 County Summary: SHASTA
 SNA Summary:
 Location: NORTH FORK OF SLATE CREEK, TRIBUTARY TO SLATE CREEK, TRIBUTARY TO THE SACRAMENTO RIVER, ~2.2 MILES WNW OF LAMOINE.
 -----Comments-----
 Distribution: 186-FT TRANSECT IN SEC 17, NW 1/4 OF THE NW 1/4.
 Ecological:
 Threat:
 General: SURVEYED IN 1994 AS PART OF THE CANTARA SPILL RECOVERY AND RESTORATIONS PROGRAM; 1 JUVENILE OBSERVED.
 Owner/Manager: USFS-SHASTA/TRINITY NF

Occurrence No. 110 Map Index: 33260 ---Dates Last Seen--- Lat/Long: 40°54'49" / 122°27'51" Township: 35N
 Occ Rank: Unknown Element: 1994-XX-XX UTM: Zone-10 N4529091 E545123 Range: 05W
 Origin: Natural/Native occurrence Site: 1994-XX-XX Precision: NON-SPECIFIC Section: 05 Qtr SW
 Presence: Presumed Extant Symbol Type: POLYGON Meridian: M
 Trend: Unknown Area: 16.7 ac Elevation: 1720 ft
 Main Source: DEPT. OF FISH & GAME 1995 (LIT)
 Quad Summary: LAMOINE (4012284/665B)
 County Summary: SHASTA
 SNA Summary:
 Location: CREEK IN CAVANAUGH CANYON, TRIBUTARY TO THE SACRAMENTO RIVER, WEST OF SHASTA LAKE.
 -----Comments-----
 Distribution: 36.1-FT TRANSECT IN SEC 5, SW 1/4 OF THE SW 1/4.
 Ecological:
 Threat:
 General: SURVEYED IN 1994 AS PART OF THE CANTARA SPILL RECOVERY AND RESTORATION PROGRAM; 1 ADULT AND 1 JUVENILE OBSERVED.
 Owner/Manager: USFS-SHASTA/TRINITY NF

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LAMOINE

RANA BOYLI FOOTHILL YELLOW-LEGGED FROG Element Code: AAABH01050		List Status Federal: None State: None	NDDB Element Ranks Global: G3 State: S2S3	Other Lists CDFG Status: SC
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Habitat Associations
 General: PARTLY-SHADED, SHALLOW STREAMS & RIFFLES WITH A ROCKY SUBSTRATE IN A VARIETY OF HABITATS.
 Micro: NEED AT LEAST SOME COBBLE-SIZED SUBSTRATE FOR EGG-LAYING. NEED AT LEAST 15 WEEKS TO ATTAIN METAMORPHOSIS.

Occurrence No. 143 Map Index: 33259 —Dates Last Seen— Lat/Long: 40°59'03" / 122°28'25" Township: 36N
 Occ Rank: Unknown Element: 1994-XX-XX UTM: Zone-10 N4536924 E544281 Range: 05W
 Origin: Natural/Native occurrence Site: 1994-XX-XX Precision: NON-SPECIFIC Section: 17 Qtr NW
 Presence: Presumed Extant Symbol Type: POLYGON Meridian: M
 Trend: Unknown Area: 11.5 ac Elevation: 1920 ft
 Main Source: DEPT. OF FISH & GAME 1995 (LIT)
 Quad Summary: LAMOINE (4012284/665B)
 County Summary: SHASTA
 SNA Summary:
 Location: NORTH FORK OF SLATE CREEK; TRIBUTARY TO SLATE CREEK; TRIBUTARY TO SACRAMENTO RIVER; APPROX. 3.7 KM WNW OF LAMOINE.
 Comments:
 Distribution: 186-FT TRANSECT IN SEC 17, NW 1/4 OF NW 1/4.
 Ecological:
 Threat:
 General: 1994 STREAM SURVEY FOR CANTARA SPILL RECOVERY AND RESTORATION PROGRAM; 2 ADULTS OBSERVED; SHOCK METHOD USED.
 Owner/Manager: USFS-SHASTA/TRINITY NF

Occurrence No. 144 Map Index: 32368 —Dates Last Seen— Lat/Long: 40°59'56" / 122°26'41" Township: 36N
 Occ Rank: Unknown Element: 1994-XX-XX UTM: Zone-10 N4538569 E546701 Range: 05W
 Origin: Natural/Native occurrence Site: 1994-XX-XX Precision: NON-SPECIFIC Section: 09 Qtr NE
 Presence: Presumed Extant Symbol Type: POLYGON Meridian: M
 Trend: Unknown Area: 5.9 ac Elevation: 2440 ft
 Main Source: DEPT. OF FISH & GAME 1995 (LIT)
 Quad Summary: LAMOINE (4012284/665B)*, CHICKEN HAWK HILL (4112214/682C)
 County Summary: SHASTA
 SNA Summary:
 Location: LITTLE SLATE CREEK; TRIBUTARY TO SLATE CREEK; TRIBUTARY TO SACRAMENTO RIVER; APPROX. 2.7 KM NW OF LAMOINE.
 Comments:
 Distribution: 36.1-FT TRANSECT IN SEC 09, NW 1/4 OF THE NE 1/4.
 Ecological:
 Threat:
 General: 1994 STREAM SURVEY FOR CANTARA SPILL RECOVERY AND RESTORATION PROGRAM; 2 ADULTS AND 1 JUVENILE OBSERVED;
 HAND/RAKE METHOD USED.
 Owner/Manager: USFS-SHASTA/TRINITY NF

Occurrence No. 145 Map Index: 32369 —Dates Last Seen— Lat/Long: 40°58'42" / 122°28'08" Township: 36N
 Occ Rank: Unknown Element: 1994-XX-XX UTM: Zone-10 N4536285 E544679 Range: 05W
 Origin: Natural/Native occurrence Site: 1994-XX-XX Precision: NON-SPECIFIC Section: 17 Qtr SE
 Presence: Presumed Extant Symbol Type: POLYGON Meridian: M
 Trend: Unknown Area: 31.2 ac Elevation: 1600 ft
 Main Source: DEPT. OF FISH & GAME 1995 (LIT)
 Quad Summary: LAMOINE (4012284/665B)
 County Summary: SHASTA
 SNA Summary:
 Location: SLATE CREEK; TRIBUTARY TO SACRAMENTO RIVER; APPROX. 2.8 KM WEST OF LAMOINE.
 Comments:
 Distribution: ALL TRANSECTS IN SEC 17; 88-FT TRANSECT IN SE 1/4 OF SE 1/4; 21-FT TRANSECT IN NE 1/4 OF SE 1/4; 39-FT AND 30-FT TRANSECTS IN NW 1/4 OF SE 1/4; 76-FT AND 61-FT TRANSECTS IN NE 1/4 OF SW 1/4.
 Ecological:
 Threat:
 General: 1994 STREAM SURVEY FOR CANTARA SPILL RECOVERY AND RESTORATION PROGRAM; 13 ADULTS OBSERVED; SHOCK METHOD USED
 Owner/Manager: USFS-SHASTA/TRINITY NF

LAMOINE

RANA BOYLI (cont.) FOOTHILL YELLOW-LEGGED FROG Element Code: AAABH01050	-----List Status----- Federal: None State: None	-----NDDB Element Ranks----- Global: G3 State: S2S3	-----Other Lists----- CDFG Status: SC
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Occurrence No. 146 Map Index:32370 ---Dates Last Seen--- Lat/Long: 40°58'23" / 122°25'36" Township: 36N
 Occ Rank: Unknown Element: 1994-XX-XX UTM: Zone-10 N4535716 E548249 Range: 05W
 Origin: Natural/Native occurrence Site: 1994-XX-XX Precision: SPECIFIC Section: 22 Qtr NE
 Presence: Presumed Extant Symbol Type: POINT Meridian: M
 Trend: Unknown Radius: 80 meters Elevation: 1240 ft
 Main Source: DEPT. OF FISH & GAME 1995 (LIT)
 Quad Summary: LAMOINE (4012284/665B)
 County Summary: SHASTA
 SNA Summary:
 Location: WHITLOW CREEK; JUST UPSTREAM FROM THE SACRAMENTO RIVER CONFLUENCE; 0.3 KM SOUTHEAST OF LAMOINE.
 Comments:
 Distribution: 36.1-FT TRANSECT IN SEC 22, NW 1/4 OF THE NE 1/4.
 Ecological:
 Threat:
 General: 1994 STREAM SURVEY FOR CANTARA SPILL RECOVERY AND RESTORATION PROGRAM. SURVEYS DONE 5/17/94 TO 9/27/94. 3 ADULTS OBSERVED; HAND/RAKE METHOD USED.
 Owner/Manager: USFS-SHASTA/TRINITY NF

Occurrence No. 147 Map Index:32371 ---Dates Last Seen--- Lat/Long: 40°57'18" / 122°28'23" Township: 36N
 Occ Rank: Unknown Element: 1994-XX-XX UTM: Zone-10 N4533688 E544352 Range: 05W
 Origin: Natural/Native occurrence Site: 1994-XX-XX Precision: NON-SPECIFIC Section: 29 Qtr NW
 Presence: Presumed Extant Symbol Type: POLYGON Meridian: M
 Trend: Unknown Area: 10.2 ac Elevation: 1960 ft
 Main Source: DEPT. OF FISH & GAME 1995 (LIT)
 Quad Summary: LAMOINE (4012284/665B)
 County Summary: SHASTA
 SNA Summary:
 Location: MOSQUITO CREEK; APPROX. 3.4 KM UPSTREAM FROM THE SACRAMENTO RIVER CONFLUENCE; SOUTHWEST OF LAMOINE.
 Comments:
 Distribution: 36.1-FT TRANSECT IN SEC 29; NW 1/4 OF THE NW 1/4.
 Ecological:
 Threat:
 General: 1994 STREAM SURVEY OF CANTARA SPILL RECOVERY AND RESTORATION PROGRAM. SURVEY CONDUCTED BETWEEN 5/17/94 & 9/27/94. 2 ADULTS OBSERVED; HAND/RAKE METHOD USED.
 Owner/Manager: USFS-SHASTA/TRINITY NF

Occurrence No. 148 Map Index:32372 ---Dates Last Seen--- Lat/Long: 40°56'51" / 122°23'38" Township: 36N
 Occ Rank: Unknown Element: 1994-09-27 UTM: Zone-10 N4532902 E551007 Range: 05W
 Origin: Natural/Native occurrence Site: 1994-09-27 Precision: NON-SPECIFIC Section: 25 Qtr SW
 Presence: Presumed Extant Symbol Type: POLYGON Meridian: M
 Trend: Unknown Area: 12.0 ac Elevation: 1400 ft
 Main Source: DEPT. OF FISH & GAME 1995 (LIT)
 Quad Summary: LAMOINE (4012284/665B)
 County Summary: SHASTA
 SNA Summary:
 Location: CAMPBELL CREEK; APPROX. 2 KM UPSTREAM FROM SACRAMENTO RIVER CONFLUENCE; SOUTHEAST OF LAMOINE.
 Comments:
 Distribution: 36.1-FT TRANSECT IN SEC 25, SW 1/4 OF THE SW 1/4.
 Ecological:
 Threat:
 General: 1994 STREAM SURVEY FOR CANTARA SPILL RECOVERY AND RESTORATION PROGRAM. SURVEY CONDUCTED 5/17/94 TO 9/27/94. 1 ADULT OBSERVED; HAND/RAKE METHOD USED.
 Owner/Manager: USFS-SHASTA/TRINITY NF

LAMOINE

HALIAEETUS LEUCOCEPHALUS (NESTING & WINTERING)

BALD EAGLE

Element Code: ABNKC10010

List Status	NDDB Element Ranks	Other Lists
Federal: Threatened	Global: G4	CDFG Status:
State: Endangered	State: S2	

Habitat Associations

General: OCEAN SHORELINES, LAKE MARGINS, AND RIVER COURSES FOR BOTH NESTING AND WINTERING. MOST NESTS WITHIN ONE MILE OF WATER.
Micro: NESTS IN LG, OLD-GROWTH, OR DOMINANT LIVE TREE W/OPEN BRANCHES, ESPECIALLY PONDEROSA PINE. ROOSTS COMMUNALLY IN WINTER.

Occurrence No. 39	Map Index: 09350	Dates Last Seen	Lat/Long: 40°53'36" / 122°21'26"	Township: 35N
Occ Rank: Unknown		Element: 1978-XX-XX	UTM: Zone-10 N4526902 E554146	Range: 04W
Origin: Natural/Native occurrence		Site: 1990-XX-XX	Precision: NON-SPECIFIC	Section: 18 Qtr NE
Presence: Presumed Extant			Symbol Type: POINT	Meridian: M
Trend: Unknown			Radius: 1 mile	Elevation: 1300 ft
Main Source: DEPT. OF FISH & GAME 1986 (PERS)				
Quad Summary: HANLAND PEAK (4012283/665A)*, LAMOINE (4012284/665B)				
County Summary: SHASTA				
SNA Summary:				
Location: INDIAN CREEK; SACRAMENTO RIVER ARM OF SHASTA LAKE				
Comments:				
Distribution:				
Ecological: NESTING TERRITORY WITH INTACT NEST.				
Threat: MUCH OF THE TERRITORY IS OWNED BY KIMBERLY CLARK AND SOUTHERN PACIFIC LAND COMPANIES.				
General: DISCOVERED IN 1976; TERRITORY WAS OCCUPIED AND SUCCESSFUL IN 1976 AND WAS REPORTED TO HAVE BEEN ACTIVE SINCE AT LEAST 1973. TERRITORY WAS UNOCCUPIED FROM 1979-1980; THERE BEEN NO RECENT SURVEYS DONE (1981-90).				
Owner/Manager: USFS-SHASTA/TRINITY NF, PVT				

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LAMOINE

STRIX OCCIDENTALIS CAURINA
NORTHERN SPOTTED OWL
Element Code: ABNSB12011

List Status	NDDB Element Ranks	Other Lists
Federal: Threatened	Global: G3T2	CDFG Status: SC
State: None	State: S2	

Habitat Associations

General: OLD-GROWTH FORESTS OR MIXED STANDS OF OLD-GROWTH & MATURE TREES. OCCASIONALLY IN YOUNGER FORESTS W/PATCHES OF BIG TREES.
Micro: HIGH, MULTISTORY CANOPY DOMINATED BY BIG TREES, MANY TREES W/CAVITIES OR BROKEN TOPS, WOODY DEBRIS & SPACE UNDER CANOPY.

Occurrence No. I15	Map Index:18806	—Dates Last Seen—	Lat/Long: 40°54'14" / 122°29'22"	Township: 35N
Occ Rank: Unknown		Element: 1989-06-06	UTM: Zone-10 N4527999 E542999	Range: 06W
Origin: Natural/Native occurrence		Site: 1989-06-06	Precision: NON-SPECIFIC	Section: 12 Qtr XX
Presence: Presumed Extant			Symbol Type: POINT	Meridian: M
Trend: Unknown			Radius: 3/5 mile	Elevation: 2800 ft

Main Source: GOULD, G. 1991 CDFG SPOTTED OWL DATABASE
Quad Summary: LAMOINE (4012284/665B)*, DAMNATION PEAK (4012285/666A)
County Summary: SHASTA
SNA Summary:
Location: SEE LIST OF QUADS.

Comments

Distribution:
Ecological: NESTING TERRITORIES BASE ON OBSERVATION OF PAIR.
Threat: TIMBER HARVEST.
General: NESTING TERRITORY NUMBER(S) = SH023.
Owner/Manager: UNKNOWN

LAMOINE

MARTES PENNANTI PACIFICA PACIFIC FISHER Element Code: AMAJF01021	-----List Status----- Federal: None State: None	-----NDDB Element Ranks----- Global: G3G4 State: S2S3	-----Other Lists----- CDFG Status: SC
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-----Habitat Associations-----
General: INTERMEDIATE TO LARGE-TREE STAGES OF CONIFEROUS FORESTS & DECIDUOUS-RIPARIAN AREAS W/ HIGH PERCENT CANOPY CLOSURE.
Micro: USE CAVITIES, SNAGS, LOGS & ROCKY AREAS FOR COVER & DENNING. NEED LARGE AREAS OF MATURE, DENSE FOREST.

Occurrence No. 75 Map Index:09176 ---Dates Last Seen--- Lat/Long: 40°58'47" / 122°26'47" Township: 36N
Occ Rank: Unknown Element: 1976-12-19 UTM: Zone-10 N4536442 E546575 Range: 05W
Origin: Natural/Native occurrence Site: 1976-12-19 Precision: NON-SPECIFIC Section: 16 Qtr XX
Presence: Presumed Extant Symbol Type: POINT Meridian: M
Trend: Unknown Radius: 1 mile Elevation: 2100 ft
Main Source: DEPT. OF FISH & GAME 1987 (OBS)
Quad Summary: LAMOINE (4012284/665B)
County Summary: SHASTA
SNA Summary:
Location: ONE MI NW OF LAMOINE.
-----Comments-----
Distribution:
Ecological:
Threat:
General: ONE TRAPPED.
Owner/Manager: PVT, STATE

LAMOINE

LEWISIA CANTELOVII CANTELOW'S LEWISIA Element Code: PDPOR04020	—List Status—	NDDB Element Ranks	—Other Lists—
	Federal: None	Global: G3	CNPS List: 1B
	State: None	State: S3.2	R-E-D Code: 2-2-3

—Habitat Associations—
General: BROADLEAFED UPLAND FOREST, LOWER MONTANE CONIFEROUS FOREST, CISMONTANE WOODLAND, CHAPARRAL.
Micro: MESIC ROCK OUTCROPS AND WET CLIFFS, USUALLY IN MOSS OR CLUBMOSS; ON GRANITICS OR SOMETIMES ON SERPENTINE. 330-1340M.

Occurrence No. 15 Map Index: 09225 —Dates Last Seen— Lat/Long: 40°58'17" / 122°25'39" Township: 36N
 Occ Rank: Good Element: 1991-10-31 UTM: Zone-10 N4535523 E548169 Range: 05W
 Origin: Natural/Native occurrence Site: 1991-10-31 Precision: SPECIFIC Section: 15 Qtr SE
 Presence: Presumed Extant Symbol Type: POLYGON Meridian: M
 Trend: Unknown Area: 9.7 ac Elevation: 1350 ft
 Main Source: WHITLEY, D. 1991 (OBS)
 Quad Summary: LAMOINE (4012284/665B)
 County Summary: SHASTA
 SNA Summary:
 Location: ALONG SACRAMENTO RIVER AND WHITLOW CREEK, SOUTH OF LAMOINE.
 —Comments—
 Distribution: TWO COLONIES; ONE ALONG SOUTH SIDE OF WHITLOW CREEK ABOUT 0.25 MILE UPSTREAM FROM THE SACRAMENTO RIVER, THE SECOND IS ALONG THE SACRAMENTO RIVER ABOUT 50 YARDS DOWNSTREAM FROM WHITLOW CREEK.
 Ecological: WHITLOW CREEK COLONY ON NORTH ASPECT ON SHALE AND METAMORPHIC OUTCROPS, UNDER SPARSE COVER OF DOUGLAS FIR AND CANYON LIVE OAK. SACRAMENTO RIVER COLONY ON VERY BARE, EXPOSED GRANITE ROCKS WITH VERY LITTLE ASSOCIATED VEGETATION.
 Threat: PLANTS APPARENTLY WERE NOT DAMAGED IN THE 1991 CANTARA METAM-SODIUM SPILL. NO OTHER THREATS NOTED.
 General: ATYPICAL SPECIMEN; POSSIBLE TAXONOMIC PROBLEM. APPROX. 300 PLANTS SEEN IN 1981 AND 500 SEEN IN 1991 IN WHITLOW CREEK POPULATION; 54 PLANTS OBSERVED IN SACRAMENTO RIVER POPULATION IN 1991.
 Owner/Manager: USFS-SHASTA/TRINITY NF, PVT

Occurrence No. 48 Map Index: 39681 —Dates Last Seen— Lat/Long: 40°59'24" / 122°25'05" Township: 36N
 Occ Rank: Excellent Element: 1998-08-01 UTM: Zone-10 N4537610 E548949 Range: 05W
 Origin: Natural/Native occurrence Site: 1998-08-01 Precision: SPECIFIC Section: 11 Qtr SW
 Presence: Presumed Extant Symbol Type: POLYGON Meridian: M
 Trend: Unknown Area: 3.8 ac Elevation: 1300 ft
 Main Source: MARTZ, C. 1998 (OBS)
 Quad Summary: LAMOINE (4012284/665B)
 County Summary: SHASTA
 SNA Summary:
 Location: UPPER SACRAMENTO RIVER, ABOUT 0.4 MILE SOUTH OF POLLARD FLAT, NORTH OF LAMOINE.
 —Comments—
 Distribution: MAPPED ALONG STEEP BANKS ON THE EAST SIDE OF RIVER.
 Ecological: NORTH-FACING CLIFFS WITH QUERCUS CHRYSOLEPIS AND PSEUDOTSUGA MENZIESII OVERSTORY. ASSOCIATED WITH SELAGINELLA, SEDUM SPATHULIFOLIUM, HEUCHERA MICRANTHA, STYRAX OFFICINALIS, MONTIA PARVIFOLIA, CHEILANTHES GRACILLIMA, RUMEX ACETOSELLA, ETC.
 Threat: FUTURE THREAT: IF SHASTA DAM RAISED 200', THIS POPULATION WILL BE NEAR HIGH WATER LINE.
 General: FEWER THAN 1000 PLANTS OBSERVED BETWEEN OCCURRENCE #48 AND 49 IN 1998.
 Owner/Manager: UNKNOWN

Occurrence No. 49 Map Index: 39682 —Dates Last Seen— Lat/Long: 40°59'24" / 122°25'04" Township: 36N
 Occ Rank: Excellent Element: 1998-08-01 UTM: Zone-10 N4537602 E548953 Range: 05W
 Origin: Natural/Native occurrence Site: 1998-08-01 Precision: SPECIFIC Section: 15 Qtr NE
 Presence: Presumed Extant Symbol Type: POLYGON Meridian: M
 Trend: Unknown Area: 2.1 ac Elevation: 1300 ft
 Main Source: MARTZ, C. 1998 (OBS)
 Quad Summary: LAMOINE (4012284/665B)
 County Summary: SHASTA
 SNA Summary:
 Location: UPPER SACRAMENTO RIVER, ABOUT 0.7 MILE SOUTH OF POLLARD FLAT, NORTH OF LAMOINE.
 —Comments—
 Distribution: MAPPED ALONG STEEP BANKS ON THE EAST SIDE OF RIVER.
 Ecological: NNW-FACING CLIFFS WITH QUERCUS CHRYSOLEPIS AND PSEUDOTSUGA MENZIESII OVERSTORY. ASSOCIATED WITH SELAGINELLA, SEDUM SPATHULIFOLIUM, HEUCHERA MICRANTHA, STYRAX OFFICINALIS, MONTIA PARVIFOLIA, CHEILANTHES GRACILLIMA, RUMEX ACETOSELLA, ETC.
 Threat: FUTURE THREAT: IF SHASTA DAM RAISED 200', THIS POPULATION WILL BE NEAR HIGH WATER LINE.
 General: FEWER THAN 1000 PLANTS OBSERVED BETWEEN OCCURRENCE #48 AND 49 IN 1998.
 Owner/Manager: UNKNOWN

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LAMOINE

LEWISIA CANTELOVII (cont.)

CANTELOW'S LEWISIA

Element Code: PDPOR04020

List Status	NDDB Element Ranks	Other Lists
Federal: None	Global: G3	CNPS List: 1B
State: None	State: S3.2	R-E-D Code: 2-2-3

Occurrence No. 59	Map Index: 43873	—Dates Last Seen—	Lat/Long: 40°53'53" / 122°27'30"	Township: 35N
Occ Rank: Good		Element: 1997-07-29	UTM: Zone-10 N4527391 E545610	Range: 05W
Origin: Natural/Native occurrence		Site: 1997-07-29	Precision: SPECIFIC	Section: 08 Qtr SW
Presence: Presumed Extant			Symbol Type: POINT	Meridian: M
Trend: Unknown			Radius: 80 meters	Elevation: 4500 ft
Main Source: ROE, L. & J. DEWIT 1997 (OBS)				
Quad Summary: LAMOINE (4012284/665B)				
County Summary: SHASTA				
SNA Summary:				
Location: SOUTHWEST SLOPE OF SUGARLOAF MOUNTAIN, ABOUT 0.9 MILE WSW OF MAPLE SPRING (DRY), SSW OF LAMOINE, WEST OF SHASTA LAKE.				

—Comments—

Distribution: FROM LAKESHORE TAKE ROAD TO SUGARLOAF LOOKOUT; TURN WEST AND TRAVEL ABOUT 0.75 MILE. SITE IS LOCATED JUST OFF RIDGELINE TO THE NORTH. MAPPED WITHIN THE SE 1/4 OF THE SW 1/4 OF SECTION 8.

Ecological: ON SHALE ROCK OUTCROP WITH ERIOGONUM CONGDONII, PENSTEMON AZUREUS VAR. AZUREUS, ERIOGONUM URSINUM AND STREPTANTHUS TORTUOSA. SLOPE IS ABOUT 70 PERCENT.

Threat:

General: MORE THAN 1000 PLANTS OBSERVED IN 1997. AREA ALONG RIDGELINE WAS LOGGED IN THE PAST.

Owner/Manager: USFS-SHASTA NF

LAMOINE

PENSTEMON FILIFORMIS

THREAD-LEAVED BEARDTONGUE
Element Code: PDSCR1L2A0

List Status	NDDB Element Ranks	Other Lists
Federal: None	Global: G3	CNPS List: 1B
State: None	State: S3.3	R-E-D Code: 2-1-3

~~Habitat Associations~~

General: CISMONTANE WOODLAND, LOWER MONTANE CONIFEROUS FOREST, MEADOWS AND SEEPS. KNOWN ONLY FROM SHASTA AND TRINITY COUNTIES.
Micro: DRY STONY SITES, GRASSY OPENINGS, & MEADOWS, OFTEN ALONG TRAILS & LOGGING ROADS; SOMETIMES ON SERPENTINE. 450-2125M.

Occurrence No. 5	Map Index: 29011	—Dates Last Seen—	Lat/Long: 40°58'55" / 122°25'55"	Township: 36N
Occ Rank: Unknown		Element: 1988-06-09	UTM: Zone-10 N4536689 E547787	Range: 05W
Origin: Natural/Native occurrence		Site: 1988-06-09	Precision: SPECIFIC	Section: 15 Qtr NW
Presence: Presumed Extant			Symbol Type: POLYGON	Meridian: M
Trend: Unknown			Area: 38.4 ac	Elevation: 1500 ft
Main Source: BURK, D. 1988 (OBS)				
Quad Summary: LAMOINE (4012284/665B)				
County Summary: SHASTA				
SNA Summary:				
Location: JUST NORTH OF LAMOINE BETWEEN I-5 AND TRANSMISSION LINES, NEAR THE SACRAMENTO RIVER..				
Comments				
Distribution: MAPPED FROM LITTLE SLATE CREEK NORTH ABOUT 0.3 MILE.				
Ecological: OPEN PINUS SABINIANA WOODLAND WITH CERANTHUS CUNEATUS, AND ARCTOSTAPHYLOS VISCIDA. ASSOCIATED WITH BRODIAEA CORONARIA, FRASARIA ALBICAULIS, CORDYLANTHUS VISCIDUS, CALYCADENIA CILIOSA, POLYGONUM SPERGULARIAEFORME, LESSINGIA NEMAELADA, ETC.				
Threat: UNDERGROUND CABLE INSTALLATION.				
General: POPULATION ESTIMATED TO BE 76,000+ PLANTS IN 1981 (MARTZ). 1000-10,000 PLANTS NOTED BY BURK IN 1988. SOILS AT THIS SITE APPEAR TO BE ULTRAMAFIC, SERPENTINE, OR METAMORPHOSED GREENSTONE.				
Owner/Manager: STATE				